



ADVENTURE PRODUCTS

SKY TRAIL®

OPERATIONS, INSPECTIONS,
AND MAINTENANCE MANUAL

Manual 1.2 REV. R1 FIRST PUBLICATION

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1.1 MANUAL OVERVIEW

A Sky Trail® is a series of elevated platforms connected by challenge elements, where the participants are protected against falls by the overhead tracking, trolley, slingline and harness. The column rings combined with the continuous tracking system ensure participant safety while allowing participants to pass at columns and choose their own path through the attraction.

1.1 TERMINOLOGY

The following terminology is specific to RCI Sky Trail® products:

- **Barrier Element** – An element placed parallel to every incline that protects participants from coming into physical contact with each other due to its orientation or design.
- **Carabiner** – A metal loop, equipped with a spring-loaded gate, which allows the connection and disconnection of a harness to a slingline.
- **Combi-rope** – Synthetic fiber covered wire rope. Used commonly on elements.
- **Emergency Action Plan (EAP)** – A document required by OSHA standards for the purpose of facilitating and organizing employer and employee actions during an emergency.
- **Entrance Barrier** – An arrangement of components that prevent access to a structure.
- **Ferrule** – Any of a number of types of objects, generally used for fastening, joining, sealing or reinforcement. They are often narrow circular rings made from metal, or less commonly, plastic.
- **Footing** – Part of a structure that is in direct contact with soil and transmits load into it.
- **Harness** – Fitted to anyone wishing to participate on the Sky Trail®. It is critical that all harnesses are stored properly and inspected prior to being used.
- **Plumber** – Plastic lumber; utilized in the structure of a Sky Trail®.
- **Poly Fix** – A fixture used to connect sections of combi-rope. Usually made out of polyethylene.
- **Pre-Flight Checks** – A series of inspections and checks performed prior to a participant or Operator entering a Sky Trail®.
- **Redundant Slider Assembly (RSA2)** – The anchorage connector used on a Sky Trail®. Superseded by the trolley slider assembly (TSA).
- **Safety Report** – A document that is required to be filed after an incident or near miss occurs on an RCI attraction.
- **Single Adjustable Slingline** – A piece of webbing with an adjustable buckle used to connect a harness to the Sky Trail® tracking system. It is only to be used with a Trail harness.
- **Single Redundant Slingline (SRS)** – An arrangement of webbing that is a single slingline with redundant safety features built into it. It is used to connect a harness to the Sky Trail® tracking system. It is only to be used with a trail plus harness. Supersedes the dual slingline.
- **Single Redundant Slingline Guide** – A guide for the use, inspection and maintenance of the single redundant slingline (SRS).
- **Sky Rail® Trolley Slider Assembly (SRTSA)** – The anchorage connector used on Sky Trail® attractions equipped with a Sky Rail® or a roller rail element. Supersedes the redundant slider assembly (RSA).
- **Sky Trail®** – The name of RCI's premier amusement product that has several model types including Discovery, Explorer, Voyager Expedition and Seeker.
- **Slingline** – A fall prevention device manufactured with webbing that is attached to a trolley that fits into the overhead tracking system. Only one person may be clipped into a single slingline at any time. It is critical that all slinglines are stored properly and inspected prior to being used.

TERMINOLOGY *CONTINUED*

- **Slingline** - A fall prevention device manufactured with webbing that is attached to a trolley that fits into the overhead tracking system. Only one person may be clipped into a single slingline at any time. It is critical that all slinglines are stored properly and inspected prior to being used.
- **Split Puck** - The wearable component of the RSA2, SRTSA and TSA trolley made of white UHMW. Designed to be replaced as needed. It is critical that all split pucks are inspected prior to being used.
- **Track Stop** - A device used to prevent access to a section of the Sky Trail® by blocking the overhead track so that a trolley cannot pass through it.
- **Track Bolt** - An application of hardware used to permanently prevent access to a section of the Sky Trail® by blocking the overhead track so that a trolley cannot pass through it.
- **Trolley Slider Assembly (TSA)** - The anchorage connector used on Sky Trail® not equipped with a Sky Rail® or roller rail element. Supersedes the RSA.

2.0 OWNERSHIP

The purpose of this manual is to provide RCI product Owners with the information they need to own and operate a Sky Trail® safely and efficiently. Every RCI Sky Trail® is engineered with patented systems that increase the level of safety, reduce the staff needed, and raise throughput capacities compared to other similar amusement attractions.

*Note: Although a Sky Trail® looks and feels much like a challenge attraction, it is an amusement attraction and should be managed as such. This manual is developed to be compliant with the following applicable standards:

- ASTM F2291 Standard Practice for Design of Amusement Rides and Devices
- ASTM F770 Standard Practice for Ownership, Operation, Maintenance, and Inspection of Amusement Rides and Devices
- ASTM F1193 Standard Practice for Quality, Manufacture, and Construction of Amusement Rides and Devices
- ASTM F2974 Standard Guide for Auditing Amusement Rides and Devices
- ANSI Z359 Fall Protection Standard

Should there be any inconsistency between the standards and this manual, the terms of the manual shall control. RCI will not provide service, support, or products to any location that is not compliant with this manual.

2.1 RCI WEBSITE

Owners/Operators have access to a Client Portal on the RCI website containing product manuals, instructional videos, supporting documents, products, safety reports, and a number of other useful tools.

2.1.1 CLIENT PORTAL DETAILS

To access the Client Portal:

1. Navigate any browser to ropescourses.force.com/ClientPortal/s/

2.2 PERSONNEL

2.2.1 SKY TRAIL® OPERATOR

The Sky Trail® must be monitored and operated by certified Operators. An Operator is a certified staff member permitted to oversee daily operations of the attraction. Daily operations of the attraction includes (but may not be limited to) daily opening and closing duties, complying with and enforcing all rules and procedures, daily pre-use inspections, outfitting participants, monitoring participant activity, and maintaining safety. All staff involved with the operations and maintenance of an RCI attraction must have a valid and current certification.

2.2.1.1 OPERATOR REQUIREMENTS

In order to be certified as an Operator, individuals:

- Must be 16 years or older to operate all levels and positions. May be subject to local, state or country laws.
- Must be under the maximum weight of 300lbs (136kg).
- Must be at least 48" (1.2m) tall and under the maximum height of 80" (2.0m).
- Must safely and properly fit in a harness.
- Must successfully complete all requirements for certification.
- Must follow all rules and be able to perform their duties without restrictions for the safety of all parties involved.
- Must be able to communicate with staff and participants clearly.
- Must be able to assess the difference between a medical emergency and non-emergency incident.
- Must be willing to work at heights of 15' (4.6m) or more for extended periods of time.
- Be capable of bending, stooping, climbing and standing for long periods of time. A Sky Trail® attraction requires physical exertion by the Operator. Those who are not able to easily perform these activities should not operate a Sky Trail®.
- Must behave appropriately towards all participants and guests.
- Must not currently have any of the following conditions: pregnancy, neck, back, joint or heart problems, recent surgery, recent stitches/wound closures or any history of physical conditions that may be aggravated by operating the attraction.

2.2.1.2 OPERATOR RULES AND RESPONSIBILITIES

An Operator is tasked with the day-to-day operations of a Sky Trail® which includes, but is not limited to:

- All opening and closing duties as described in sections 3.1 and 3.2.
- Conducting daily pre-use inspections of the attraction and all safety equipment prior to opening the attraction.
- Documenting the daily pre-use inspection on the daily checklist for each operational day.
- Properly outfitting participants as outlined in section 3.3 and completing the required pre-flight checks prior to any participant being allowed on the attraction.
- Complying with, informing, and enforcing all participant rules of the attraction.

OPERATOR RULES AND RESPONSIBILITIES *CONTINUED*

- Monitoring activity on the attraction and immediately stopping any unsafe behavior.
- Maintaining safety of all participants, guests, and other personnel.
- Ensuring that the number of participants on the attraction does not exceed the maximum number of participants as defined on the attraction data plate.
- Implementing emergency action procedures in the event of an emergency.

In addition to completing the day to day operations, Operators must comply with the following rules while operating. Failure to observe the following safety instructions could result in serious injury or death and may result in being dismissed from the attraction or property.

- No one is allowed on the attraction without the proper safety equipment. Going on a Sky Trail® without the proper safety equipment or without being properly attached to the attraction could result in serious injury or death. Operators should always perform pre-flight checks on each other prior to being allowed on the attraction.
- Operators must follow all posted signs and stickers.
- Operators must constantly monitor all participant activity, enforce all safety rules and stop any behavior before it becomes unsafe. Operators must place themselves in a position to communicate with co-workers and participants at all times. Operators must wear a whistle at all times in order to gain the attention of participants or sound an alarm in the instance of an emergency. It is RCI policy that all Operators be provided with a whistle.
- One Operator must stay within one level of any participant on the attraction. If the site has additional products or attractions, consult the other volumes of the manual for staffing guidelines.
- Operators must never leave the attraction entrance unattended while in operation.
- Cell phones, cameras and electronics are strictly prohibited from being used or carried on to the attraction.
- Pockets must be empty. No loose objects. Eyeglasses must be tight and secure.
- Operators must wear secure footwear at all times. No bare feet, flip-flops, open-toed or open-heeled (with no strap) shoes. Shoelaces must be tied.
- No gum, food or drinks allowed on the attraction.
- No running, jumping, horseplay, or hanging in the harness while operating.
- The redundant slingline should stay in front of and between the shoulders at all times. Do not wrap the slingline around any part of the body.
- Do not touch the overhead tracking system or tamper with the harness or redundant slingline while on the attraction.
- Operating while under the influence of illegal drugs or alcohol is prohibited. Please consider prescription medications and their effects prior to operating. Always consult your healthcare professional prior to operating if you have any questions or concerns.

Operators must be responsible when operating the Sky Trail®! You should be in good health to operate. You know your physical, mental, and emotional conditions. If you suspect your health could be at risk for any reason or you could aggravate a pre-existing condition of any kind, notify the Manager of the attraction and do not operate the attraction. Risks are inherent when operating a Sky Trail®. Failure to observe the safety instructions outlined in this manual could result in serious injury or death. Please be aware of the risks involved with operating. Notify the Manager of the attraction of any injuries on the attraction before leaving the area. In the case of an injury, a Manager must be notified and all parties involved must fill out a Safety Report.

2.2.1.3 OPERATOR CERTIFICATION

To verify compliance with the RCI requirements for the safe operation of the attraction, every Operator must be trained and certified by a RCI certified Operator Trainer. Valid Sky Trail® Operator certificates are required for all staff overseeing and conducting daily operation and inspection of the Sky Trail®. All Operators must meet the job requirements listed above in section 2.2.1.1, pass a practical training, and a written test in order to be certified. Operator certification is valid for one year and all Operators must be re-certified each year.

2.2.1.3.1 OPERATOR COMMISSIONING CERTIFICATION

RCI provides an initial Operator training, referred to as the commissioning training, following the commissioning inspection of the Sky Trail®. The total number of Operators trained during the commissioning Operator training is specified in the site's contract. Operators who demonstrate competence in skills, knowledge of policies, procedures, and pass practical and written tests will be awarded a Sky Trail® Operator certificate issued by an RCI certified Operator Trainer.

The initial Operator certificate is valid for one year from the date of issue; annual recertification is required as outlined in section 2.2.1.4.

Operator training details:

- Training is typically 16 hours with a 30-minute lunch break and two 15-minute breaks each day.
- Custom attractions or attractions with additional features may require additional training.
- 100% participation is required of all trainees.
- Trainees must demonstrate competence in skills, knowledge of all policies and procedures.
- Trainees must pass a written test after attending 100% of the practical training.
- Cell phones are not permitted during training.
- Trainees must wear appropriate clothes and appropriate footwear.
- Training is subject to postponement at the client's expense if trainees arrive unprepared.
- Certification will be subject to the RCI certified Operator Trainer's discretion.

2.2.1.3.2 OPERATOR CERTIFICATION-PERFORMED BY RCI

After the commissioning Operator certification training has been completed, if the site needs additional Operators trained and does not have a certified on site Operator Trainer, the site can contract RCI to perform additional Operator training. All trainees must attend 100% of practical physical training. Once the practical training has been performed, trainees will be given a written test. Trainees who pass both the practical training and the written test will be considered compliant and will be issued an Operator certificate which will be valid for one year. All Operators must be re-certified each year. To schedule this training, contact RCI's Training and Inspection Department.

2.2.1.3.3 OPERATOR CERTIFICATION-PERFORMED BY AN ON SITE OPERATOR TRAINER

If the location has an on site RCI certified Operator Trainer, the Operator training can be completed without contacting RCI. All Operator training must be completed by an RCI certified Operator Trainer. All trainees must attend 100% of practical physical training conducted by the on site Operator Trainer. Once the practical training has been performed, trainees will be given a written test issued by the Operator Trainer. Trainees who pass both the practical training and the written test will be considered compliant and will be issued an Operator certificate which will be valid for one year. All Operators must be re-certified each year.

*Note: Refer to section 2.2.3 to learn more about the Operator Trainer position and certification process.

2.2.1.4 OPERATOR RE-CERTIFICATION

To verify compliance with the RCI requirements for the safe operation of the attraction, every Sky Trail® Operator must be re-certified on an annual basis. In order to be re-certified, an Operator must attend a practical training and pass a written test. The site can contract RCI to perform recertification training or use an RCI certified on site Operator Trainer. Operators that are not trained by an RCI certified Operator Trainer will be considered non compliant.

RCI recommends that at a minimum, the following criteria be tested to establish that the Operator meets the operating requirements, is compliant with this manual, and is qualified for recertification. The re-certifying Operator must:

- Meet the job requirements and responsibilities as outlined in sections 2.2.1.1 and 2.2.1.2
- Be capable of operating the attraction as outlined in section 3.0.
- Be capable of inspecting the attraction and safety equipment as outlined in section 4.0.
- Be capable of recommending maintenance, equipment retirement, and equipment repairs as outlined in section 5.0.
- Demonstrate the capability of executing the site-specific Emergency Action Plan as outlined in section 2.7.
- Meet any site-specific requirements or regulations.

2.2.2 SKY TRAIL® HARNESSING ASSISTANT

Upon request, RCI offers harness only training for those who do not meet the requirements of a full Operator. This training can also be conducted by an on site certified Operator Trainer. A Harnessing Assistant is only responsible for harnessing participants. Harnessing Assistants are not allowed to complete daily pre-use inspections of the equipment or attraction, load/unload participants onto/off the attraction, work as an Operator on the attraction, or be responsible for any emergency take downs should one occur. A Harnessing Assistant can not be counted as an Operator in order to meet operating requirements. Harnessing Assistant certification is valid for one year.

Harnessing Assistants must:

- Be under constant supervision by certified Operators.
- Meet the minimum age requirement of 16. May be subject to local, state or country laws.
- Be knowledgeable about all participant rules.
- Undergo practical training and pass a written test.

Harnessing Assistants must not:

- Work in any attraction station other than Harnessing.
- Be counted as an Operator in order to meet operating requirements.

2.2.2.1 HARNESSING ASSISTANT CERTIFICATION

To verify compliance with the RCI requirements for the safe operation of the attraction, every Harnessing Assistant must be trained and certified by an RCI certified Operator Trainer. Instructions on all of these processes are below. Harnessing Assistants that are not trained by an RCI certified Operator Trainer will be considered non-compliant.

2.2.2.1.1 HARNESSING ASSISTANT CERTIFICATION-PERFORMED BY RCI

RCI can be contracted to perform the Harnessing Assistant training. All trainees must attend 100% of practical physical training. Once the practical training has been performed, trainees will be given a written test. Trainees who pass both the practical training and the written test will be considered compliant and will be issued a Harnessing Assistant certificate which will be valid for one year. All Harnessing Assistants must be re-certified each year. To schedule this training, contact RCI's Training and Inspection Department.

2.2.2.1.2 HARNESSING ASSISTANT CERTIFICATION- PERFORMED BY AN ON SITE OPERATOR

If the location has an on site RCI certified Operator Trainer, the Harnessing Assistant training can be completed without contacting RCI. All trainees must attend 100% of practical physical training conducted by the on site Operator Trainer. Once the practical training has been performed, trainees will be given a written test issued by the Operator Trainer. Trainees who pass both the practical training and the written test will be considered compliant and will be issued a Harnessing Assistant certificate which will be valid for one year. All Harnessing Assistants must be re-certified each year

2.2.2.2 HARNESSING ASSISTANT RE-CERTIFICATION

To verify compliance with the RCI requirements for the safe operation of the attraction, every Harnessing Assistant must be re-certified by an RCI certified Operator Trainer on an annual basis. The site can contract RCI to perform recertification training or can use an on site RCI certified Operator Trainer. Harnessing Assistants that are not trained by an RCI certified Operator Trainer will be considered non compliant.

2.2.3 SKY TRAIL® OPERATOR TRAINER

Certified Operator Trainers are qualified individuals who are permitted to train and certify Operators and Harnessing Assistants. Certified Operator Trainers are also responsible for Operator and Harnessing Assistant recertification on an annual basis. Operator Trainers can not train other Operator Trainers or Inspectors. All Operator Trainers must be trained by RCI. The Operator Trainer certification is valid for three years and must re-certify upon certificate expiration. Sites that wish to have a certified Operator Trainer on site must contact RCI's Training and Inspection Department.

2.2.3.1 OPERATOR TRAINER REQUIREMENTS

In order to be certified as an Operator Trainer, individuals:

- Must be 21 years or older. May be subject to local, state or country laws.
- Must hold a valid Operator certificate.
- Must have operating experience (RCI recommends at least 160 hours of operating experience).
- Must successfully complete all requirements for certification including attending a physical practical training and passing a written test.
- Must exhibit a knowledge of all rules and procedures.
- Must effectively demonstrate competent teaching abilities of all rules and procedures.
- Must be able to communicate with staff and trainees clearly and effectively.

2.2.3.2 OPERATOR TRAINER RULES AND RESPONSIBILITIES

All Operator Trainers must abide by the rules and responsibilities listed in section 2.2.1.2. The Operator Trainer is responsible for ensuring all staff are added to the online testing system and that all staff working the attraction have a valid Operator certificate. In order to maintain an Operator Trainer certification, the Operator Trainer must conduct at least one training session in a calendar year. RCI reserves the right to revoke the certificate if the rules laid out in this manual are not being followed.

2.2.3.3 OPERATOR TRAINER CERTIFICATION

To verify compliance with the RCI requirements for the safe operation of the attraction, every Operator Trainer must be trained and certified by RCI. Valid Operator Trainer certificates are required in order to train and certify Operators and Harnessing Assistants. Operator Trainers must meet the job requirements listed above in section 2.2.3.1, pass a practical training, and a written test in order to be certified. Operator Trainer certification is valid for three years and all Operator Trainers must be re-certified upon certificate expiration.

2.2.3.3.1 OPERATOR TRAINER CERTIFICATION- PERFORMED BY RCI

All trainees must attend 100% of practical physical training. Trainees must exhibit a knowledge of all rules and procedures and be audited on the ability to train and teach new and existing staff. Trainees will also undergo training on how to effectively utilize the online testing system in order to certify staff. Once the practical training has been performed, trainees will be given a written test. Trainees who pass both the practical training and the written test will be considered compliant and will be issued an Operator Trainer certificate which will be valid for three years. All Operator Trainers must be re-certified upon certificate expiration. To schedule this training, contact RCI's Training and Inspection Department.

2.2.3.4 OPERATOR TRAINER RECERTIFICATION

To verify compliance with the RCI requirements for the safe operation of the attraction, every Operator Trainer must be re-certified every three years. In order to be re-certified, an Operator Trainer must attend a practical training and pass a written test. The site must contract RCI to perform recertification training. Operator Trainers that are not trained by RCI will be considered non compliant.

2.2.4 SKY TRAIL® INSPECTOR

Certified Inspectors are qualified individuals who are permitted to complete and submit the annual inspection of the attraction and safety equipment as outlined in section 4.3 of this manual. All Inspectors must be trained by RCI. The Inspector certification is valid for three years and Inspectors must re-certify upon certificate expiration. Sites that wish to have a certified Inspector on site must contract RCI to perform this training.

2.2.4.1 INSPECTOR REQUIREMENTS

In order to be certified as an Inspector, individuals:

- Must be 21 years or older. May be subject to local, state or country laws.
- Must successfully complete all requirements for certification including attending a physical practical training and passing a written test.
- Must effectively demonstrate competency in all inspection criteria of the attraction as well as the safety equipment.
- Must demonstrate how to safely use the safety equipment as well as how to secure any cameras, tools, etc. needed to complete the annual inspection.

2.2.4.2 INSPECTOR RULES AND RESPONSIBILITIES

Inspectors are required to follow all attraction rules listed in section 2.3.1. The Inspector is also responsible for completing the following tasks:

- Ordering from RCI the necessary inspection paperwork needed to complete the inspection prior to any attraction certification expiration dates.

INSPECTOR RULES AND RESPONSIBILITIES *CONTINUED*

- Completing the annual inspection in accordance with the inspection requirements and procedures listed in this manual.
- Removing from service any pieces of safety equipment deemed as failed and accurately documenting on the equipment inventory log.
- Blocking access to any parts of the attraction deemed as failed or unsafe and contacting RCI for all replacements.
- Submitting all documents and pictures required upon completion of the annual inspection to RCI in a timely manner prior to any attraction certification expiration dates.
- In order to maintain an Inspector certification, the Inspector must conduct and submit an inspection annually. RCI reserves the right to revoke the certificate if the rules laid out in this manual are not being followed.

2.2.4.3 INSPECTOR CERTIFICATION

To verify compliance with the RCI requirements for the safe operation of the attraction, every Inspector must be trained and certified by RCI. On site Operator Trainers are not permitted to train Inspectors. Valid Inspector certificates are required in order to complete the required annual inspection of the attraction and safety equipment. Inspectors must meet the job requirements listed above in section 2.2.4.1, pass a practical training and a written test in order to be certified. Inspector certification is valid for three years and all Inspectors must be re-certified upon certificate expiration.

2.2.4.3.1 INSPECTOR CERTIFICATION-PERFORMED BY RCI

All trainees must attend 100% of practical physical training. Trainees will undergo training on how to safely inspect the attraction, inspect the safety equipment, and how to adequately document and submit the annual inspection. Trainees will also be trained on how to order the necessary paperwork required in order to complete the annual inspection, as well as how to audit their site's operations. Once the practical training has been performed, trainees will be given a written test. Trainees who pass both the practical training and the written test will be considered compliant and will be issued an Inspector certificate which will be valid for three years. All Inspectors must be re-certified upon certificate expiration. To schedule this training, contact RCI's Training and Inspection Department.

2.2.4.3.2 INSPECTOR RECERTIFICATION

To verify compliance with the RCI requirements for the safe operation of the attraction, every Inspector must be re-certified every three years. All Inspector recertification training must be conducted by RCI. To schedule this training, contact RCI's Training and Inspection Department.

2.3 PARTICIPANTS

2.3.1 PARTICIPANT RULES AND RESPONSIBILITIES

As stated in section 2.2.1.2, Operators are required to enforce all participant rules to help ensure the safety of all guests. The following information must also be displayed on signage near the Sky Trail® attraction. Participants:

- Must be able to understand and demonstrate knowledge of all safety rules and the Sky Trail® environment to experience the attraction without a responsible chaperone.
- Must be at least 48" (122cm) tall to participate without a responsible chaperone. RCI requires that any child between the height of 42" (1.1m) and 48" (1.2m) be assisted by a responsible chaperone. The minimum height is 42" (1.1m) tall. The maximum height is 80" (2.0m) tall.
- Must be under the maximum weight of 300lbs (136kg).
- Must safely fit in a harness. Once it has been adjusted by an Operator, the harness should be snug and secure.
- Must wear secure footwear at all times. No bare feet, flip-flops, open-toed or open-heeled (with no strap) shoes. Shoelaces must be tied.
- Pockets must be empty. No loose objects such as cell phones or cameras. Eyeglasses must be secure. Operators are not responsible for lost or misplaced personal items.
- Cell Phones are not allowed on attraction. Cameras and other electronics are strictly prohibited from being used or carried onto the attraction.
- No gum, food or drinks allowed on the attraction.
- Follow all Operator instructions, posted signs and stickers.
- Only one participant on an activity at a time except when a child is being assisted by a chaperone.
- No running, jumping, horseplay, or hanging in harness. Operators reserve the right to expel participants displaying these behaviors.
- The redundant slingline should stay in front of and between shoulders at all times. Do not wrap the slingline around any part of the body.
- Do not touch the overhead tracking system or tamper with the harness or redundant slingline.
- Participating while under the influence of drugs or alcohol is prohibited. Please consider prescription medications and their effects prior to participating. Always consult your healthcare professional prior to participation if you have any questions.
- This attraction is not recommended for guests with the following conditions: pregnancy, neck, back, joint or heart problems, recent surgery, recent stitches/wound closures or any history of physical conditions that may be aggravated by these attractions. People with characteristics that inhibit their ability to follow these rules and the verbal commands of their chaperone or an Operator should not participate.

Participate responsibly when on the Sky Trail®! You should be in good health to participate. You know your physical condition, our Operators do not. If you suspect your health could be at risk for any reason or you could aggravate a pre-existing condition of any kind, do not participate. Risks are inherent when participating on a Sky Trail®. Injuries that can occur, include, but are not limited to bumps, bruises and scrapes. Please be aware of the risks involved with participating. Make the Operator aware of any pre-existing injuries or other conditions before being harnessed. Notify the Manager of the attraction of any injuries on the attraction before leaving the area.

PARTICIPANT RULES AND RESPONSIBILITIES *CONTINUED*

A Sky Trail® requires physical exertion by the participant. Participants must climb, bend, stoop, walk up and down stairs, etc. Those who are not able to easily perform these activities should not attempt a Sky Trail®. Management reserves the right to refuse anyone access to the attraction if they believe it would be unsafe for them, other guests or the staff.

Failure to observe the preceding safety instructions could result in serious injury or death and may result in participants being dismissed from the attraction or property at the discretion of the Operators and management. In the case of an accident, a Manager must be notified and all parties involved must fill out a Safety Report. All safety reports must be submitted to RCI within seven days of any incident.

2.3.1.1 SKY TRAIL® CHAPERONE REQUIREMENTS

A responsible chaperone should be capable of helping the child move their slingline through the attraction. RCI recommends that a chaperone be a parent, guardian, or at least above the age of 18. At a minimum the chaperone must:

- Be at least 48" (1.2m). The maximum height is 80" (2.0m) tall.
- Fit all criteria pertaining to the rules.
- Must stay within one element distance of the child at all times.

2.3.2 PARTICIPANT ATTIRE

As stated in section 2.3.1, participants are required to have appropriate footwear. Bare feet, high heels, flip-flops, open-toed or open-heeled (no heel strap) shoes are not allowed. Owners may want to consider offering shoes to borrow or purchase. Participants should be wearing fully dry clothing and it is recommended that the clothing cover their shoulders and thighs.

2.3.3 PARTICIPANT BELONGINGS

For the safety of participants, personnel, and all guests, participants are not allowed to carry items with them onto the attraction. No loose objects such as cell phones, cameras, wallets, or any other loose items are allowed on the attraction. Pockets must be empty in order to participate on the attraction. Participants should be encouraged to leave personal items somewhere secure on the ground. Owners may want to consider adding lockers, storage bins or cubbies to their facility. Operators are not responsible for any lost or misplaced personal items.

2.4 ATTRACTION DETAILS

There are key components that must be located on or around the attraction in order to be considered compliant with manufacturer requirements. Do not remove any of these components before consulting with RCI. These components include the following:

2.4.1 DATA PLATE



Each attraction has a unique identification number and has a predetermined maximum number of participants who can be on the Sky Trail® at one time. This number does not include Operators. Individual Sky Trails® are assigned a data plate, which must be posted on the entrance to the attraction.

The data plate includes:

- Manufacturer information
- Attraction serial number
- Maximum number of participants
- Participant weight limit
- Unaccompanied minimum height
- Maximum height
- Participant speed

2.4.2 ATTRACTION STICKERS

All stickers must be in place on the structure according to manufacturer specifications. Specific sticker locations can be found on the attraction plan set provided by RCI. Stickers may include but are not limited to:



Column Number Stickers

Warning Stickers

Inspection Certification Sticker

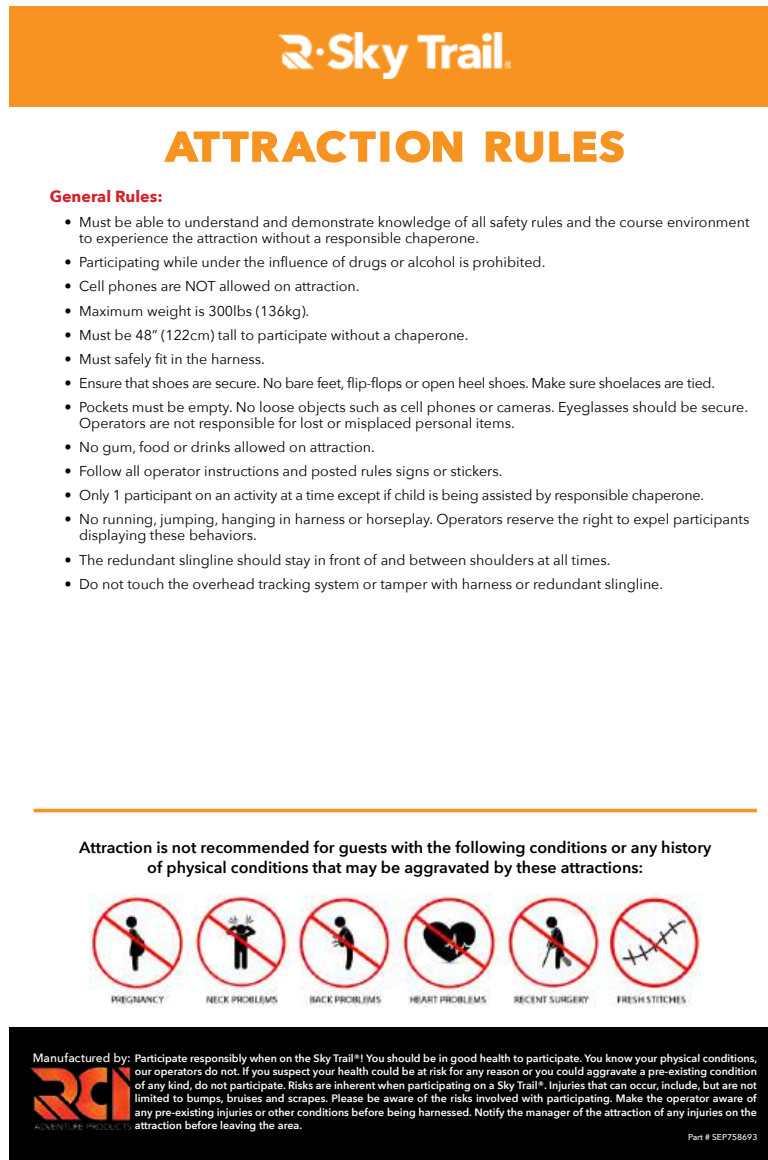
Pre-Flight Sticker

SRS Adjustment Guide Sticker

*Note: Replacement stickers can be ordered from RCI by contacting the Client Success Department. If any of the stickers listed above are not present, they must be replaced and installed in their designated locations. If the location has a Safety Entrance installed, SRS Adjustment Guide stickers may not be required. Site specifics such as uneven flooring may require the use of the SRS Adjustment Guide stickers, even if the attraction has a Safety Entrance. Contact the RCI Client Success Department for more information.

2.4.3 RULES SIGNS

A participant rules sign is provided with each Sky Trail® attraction. It is mandatory that this sign is posted near the attraction entrance and is oriented in such a way as to make reading easy for all participants. All participants have a duty to read and acknowledge the rules. RCI recommends posting an additional rules sign near the ticket booth if it is located away from the Sky Trail® entrance.



*Note: Variations to the rules sign provided to the Owner upon purchase must be requested in writing and approved in writing by RCI.

2.4.3.1 BRANDED RULES SIGNS

In order to stay compliant with manufacturer requirements, the owner/client may create their own signs as long as the instructions listed below are followed:

- All content on the RCI sign that is provided to the owner/client as part of the purchase agreement must be listed verbatim on the new sign that the owner creates.
- The new sign must clearly state what attraction the rules are for.
- The owner/client may choose to use the RCI product logo or simply spell out the product name as it is officially written per brand guidelines.
- Health warning symbols must be present.
- The final design of the new sign must be sent to the RCI Compliance Manager to be kept on file in the owner/client records.

2.4.3.2 TRANSLATED RULES SIGNS

Similar rules apply if an owner/client chooses to have their sign translated in another language other than English.

- The English sign must be present alongside the translated version.
- All content on the RCI sign that is provided to the owner/client as part of the purchase agreement must be listed with the most accurate translation on the new sign that the owner/client creates.
- The product name(s) should not be translated into alternate words or meanings wherever the product name is listed on the sign.
- The new sign must clearly state what attraction the rules are for. The owner/ client may choose to use the actual product logo or simply spell out the product name as it is officially written per brand guidelines.
- Health warning symbols must be present.

*Note: Owners/clients can access the downloadable version of the Rules Sign Policy on RCI's online Client Portal.

2.4.4 ENTRANCE BARRIER



It is the duty of the Owner/Operators to ensure that appropriate barriers are kept in place for the Sky Trail®. The facility should make reasonable efforts to ensure that the RCI product is not accessible by any individual during the hours that the course is not in operation. Entrance barriers must meet all design and engineering specifications and have an appropriate padlock to close off the Sky Trail® when not in use and prevent unauthorized access to the attraction. Carabiners may not be used as locks for an entrance barrier.

Barriers may include:

- Perimeter fencing
- Course entrance doors with a padlock
- Incline netting or fencing

2.4.5 BARRIER ELEMENTS



Barrier elements can be installed next to most objects in order to prevent individuals on the Sky Trail® from coming into contact with hazards. These elements have been designated by RCI's Engineering Department and must be in place in order to be in compliance with RCI standards.

2.5 SAFETY EQUIPMENT

All Sky Trail® attractions come standard with an initial set of safety equipment. The quantity and style is dependent on the overall attraction size and specifications. Prior to using the safety equipment, Operators must undergo specific training in its proper use. All safety equipment must be purchased through RCI. All safety equipment must be inspected and documented by a certified Operator prior to use. The safety equipment must be logged and inventory records must be routinely updated. Misuse of the safety equipment, alterations, or failure to follow the instructions in this manual may result in serious injury or death.

2.5.1 HARNESES

All Sky Trail® attractions come with an initial set of full body harnesses. The total amount is dependent on the size of the attraction and is specified in the site's contract. Harnesses must be properly fitted by a certified Operator to anyone wishing to participate on a Sky Trail®. It is critical that all harnesses be inspected by a certified Operator prior to being used. Failure to inspect harnesses prior to use may result in serious injury or death. All harnesses must be stored properly and cleaned as necessary according to the guidelines in this manual.

*Note: Refer to section 3.3.1 for outfitting instructions, section 4.4.1 for inspection guidelines, section 2.5.6 for safety equipment storage, and section 5.1.2 for safety equipment cleaning procedures.

2.5.2 SLINGLINES

The slingline is a fall prevention device manufactured with webbing that is attached to the trolley which fits into the Sky Trail® overhead track system. All Sky Trail® attractions come with an initial set of slinglines. The total amount is dependent on the size of the attraction and is specified in the site's contract. Slinglines must be fitted and attached by a certified Operator to anyone wishing to participate on a Sky Trail®. It is critical that all slinglines be inspected by a certified Operator prior to being used. Only one person may be clipped into a single slingline at any given time. Failure to inspect slinglines prior to use may result in serious injury or death. All slinglines must be stored properly and cleaned as necessary according to the guidelines in this manual.

*Note: Refer to section 3.3.2 for outfitting instructions, section 4.4.2 for inspection guidelines, section 2.5.6 for safety equipment storage, and section 5.1.2 for safety equipment cleaning procedures.

2.5.3 CARABINERS

Carabiners are metal loops with opening gates and are used as connection points between slinglines and harnesses. All Sky Trail® attractions come with an initial set of carabiners. The quantity and style is dependent on the overall attraction size and specifications. It is critical that all carabiners be inspected by a certified Operator prior to being used. Failure to inspect carabiners prior to use may result in serious injury or death. With each use of a carabiner, the positioning and connection must be checked. All carabiners must be stored properly according to the guidelines in this manual.

*Note: Refer to section 3.3.2 for outfitting instructions and section 4.4.4 for inspection guidelines.

2.5.4 TROLLEYS

The trolley is attached to a slingline and is inserted into the Sky Trail® overhead track. The trolley then slides through the track and the column rings, allowing participants to experience a self-guided tour of the Sky Trail®. RCI manufactures several different types of trolleys to accommodate specific Sky Trail® models. All Sky Trail® attractions come with an initial set of trolleys that are attached to the slinglines. The quantity and style is dependent on the overall attraction size and specifications. It is critical that all trolleys be inspected by a certified Operator prior to being used. Failure to inspect trolleys prior to use may result in serious injury or death. Trolleys will require routine maintenance. All trolleys must be stored properly according to the guidelines in this manual.

*Note: Refer to section 3.3.2 for outfitting instructions, section 4.4.3 for inspection guidelines, section 2.5.6 for safety equipment storage, and section 5.1.2 for safety equipment cleaning procedure

2.5.4.1 REDUNDANT SLIDER ASSEMBLY (RSA2) TROLLEY



The anchorage connector used on a Sky Trail® not equipped with a Sky Rail® or Roller Rail element. The RSA2 is superseded by the TSA model. The RSA2 is attached to a slingline and is inserted into the Sky Trail® overhead track.

2.5.4.2 TROLLEY SLIDER ASSEMBLY (TSA) TROLLEY



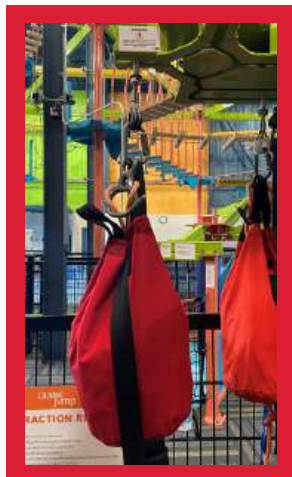
The anchorage connector used on a Sky Trail® not equipped with a Sky Rail® or Roller Rail element. Supersedes the RSA2 model. The TSA is attached to a slingline and is inserted into the Sky Trail® overhead track.

2.5.4.3 SKY RAIL TROLLEY SLIDER ASSEMBLY (SRTSA) TROLLEY



The anchorage connector used on a Sky Trail® equipped with a Sky Rail® or Roller Rail element. The SRTSA is attached to a slingline and is inserted into the Sky Trail® overhead track.

2.5.5 EMERGENCY TAKE DOWN KIT



The Emergency Take Down Kit (ETK) is a packaged kit used to belay a participant off the Sky Trail® attraction in the event of a medical emergency (if deemed necessary by certified Operators). ETK's are required to be placed by a certified Operator on the Sky Trail® in designated locations every day prior to opening the attraction. It is critical that all components of the ETK be inspected and repacked by a certified Operator prior to being used. Failure to inspect all components prior to use may result in serious injury or death. Every ETK must contain a rescue rope, a guide rope, three aluminum carabiners, one steel carabiner, one RSA2, one steel rescue figure 8, one aluminum figure 8, rescue scissors and a bag to contain it all. All ETK components must be purchased through RCI. All ETK's must be stored properly according to the guidelines in this manual.

*Note: Refer to section 4.4.5 for inspection guidelines, 4.4.5.8 for packing instructions, and section 2.5.6 for safety equipment storage.

2.5.6 SAFETY EQUIPMENT STORAGE

In order to help maximize the potential service life of the Sky Trail® safety equipment, the following storage instructions should be followed:

- Store all safety equipment in a cool, dry area away from any damaging chemicals such as acids, petroleum-based products, alkaline or bleach.
- Only store safety equipment when fully dry.
- Do not expose safety equipment to direct sunlight for extended periods of time.
- Do not drag safety equipment across rough surfaces.
- Do not store safety equipment in temperatures exceeding 110° F (43° C).
- Do not store safety equipment outdoors for an extended period of time.

2.5.7 SAFETY EQUIPMENT SERVICE LIFE

The harness, slingline, trolley, carabiner, and associated components are considered fall protection equipment. The usable life of fall protection equipment is influenced by the environment and conditions the product is exposed to, frequency of use, care, maintenance, and other factors that are not necessarily visually identifiable that will affect the life of the product. It is the responsibility of the Owner and Operators to ensure the products pass all inspection criteria and are satisfactory for use. The safety equipment must always be inspected prior to each use per the instructions supplied with the equipment at the time of purchase, as well as the information in this manual.

Fall protection equipment must be included in a formal inspection program that is conducted and documented by a competent person on a regular basis. The life expectancy will vary depending upon the results of inspections. Results from the daily inspection of the product should be the major factor in determining life expectancy. All safety equipment must be tracked using its unique serial numbers in order to keep accurate equipment inventory logs. Equipment inventory logs must be maintained, kept up to date, and filed at the Sky Trail® location.

Regarding the lifespan of safety equipment, on January 14th, 2013, American National Standards Institute (ANSI) A10.32 removed the service life on fall protection equipment manufactured of synthetic fiber. This revised standard now correlates with OSHA, ANSI Z359.1-2007, and ANSI Z359 current revised standards of the fall protection code.

2.5.8 SAFETY EQUIPMENT RECORDING

All safety equipment should be routinely documented on an equipment inventory log. Equipment inventory logs should be updated each time that a piece of safety equipment has initially been put into circulation, undergone maintenance, is sent in to RCI for repair, or has failed inspection. All safety equipment should be logged according to its specific designated serial number.

At a minimum the equipment log should contain the following:

- Serial number
- Style of safety equipment
- Condition at time of inspection
- Detailed descriptions of wear and location of wear
- Any maintenance performed, or repair performed by RCI, including date
- Date of inspection
- Date of first use (if known)

*Note: An example of an equipment inventory log can be downloaded from the Client Portal on RCI's website.

2.6 INSPECTION REQUIREMENTS

A series of attraction inspections are required as part of owning and operating a Sky Trail®. The following sections summarize the necessary inspections. Additional detailed information about inspections can be found in section 4.0.

2.6.1 DAILY PRE-USE INSPECTION

A daily pre-use inspection of the Sky Trail® attraction and all safety equipment must be completed prior to each operational day by a certified Operator before participants are allowed on the attraction. The daily pre-use inspection must be documented each time and records must be kept on file at the site location. RCI recommends rotating the staff completing the daily pre-use inspection to avoid complacency with inspection requirements. Refer to section 4.1 for more details on how to perform a daily pre-use inspection.

2.6.2 QUARTERLY INSPECTION

A quarterly inspection, conducted by a certified Operator or certified Inspector every quarter, includes a more thorough inspection of the Sky Trail® attraction, safety equipment, and all attraction documentation. The quarterly inspection involves a thorough tactile inspection of 25% of the trolleys for wire breaks in the wire rope assemblies. Quarterly inspections must be documented and records must be kept on file at the site location. Refer to section 4.2 for more details on how to perform a quarterly inspection.

2.6.3 ANNUAL INSPECTION AND RECERTIFICATION

Annual inspection and recertification is critical to ensure continued safe operation of any RCI system. An annual inspection of a Sky Trail® is a very thorough and detailed examination of all components of the attraction including all safety equipment, documentation in the form of equipment logs, maintenance logs and safety reports, and ensuring all staff is trained and certified. To verify compliance with the RCI requirements for the safe operation of the Sky Trail®, the attraction must be inspected and subsequently re-certified on an annual basis. Facilities can contract RCI to perform the annual inspection or have a RCI certified on site Inspector perform the annual inspection. Facilities that do not follow one of these processes will be considered non-compliant after their initial certificate to operate has expired.

Maintaining a current attraction certification is mandatory to operate the attraction. RCI will make an effort to notify the Owner of the recertification requirements and to make arrangements, however, the primary responsibility for compliance belongs to the Owner. RCI reserves the right to alert the appropriate authorities if the Sky Trail® is not certified to operate. If the facility is not inspected and re-certified annually, the facility assumes all liability for structure and safety. RCI reserves the right to refuse the sale of replacement parts to non-compliant locations. Reference sections 2.6.3.1 and 2.6.3.2 for more details on how to meet the annual inspection requirements.

2.6.3.1 ANNUAL INSPECTION AND RECERTIFICATION- PERFORMED BY RCI

Facilities can contract RCI to perform the annual inspection. If a site contracts RCI to complete the annual inspection, an RCI Inspector will inspect the attraction structure, safety equipment, signage, operations, and all documentation associated with the attraction.

ANNUAL INSPECTION AND RECERTIFICATION- PERFORMED BY RCI *CONTINUED*

The RCI Inspector can make recommendations based on the results of the inspection. RCI reserves the right to withhold the certification until proof of repairs/recommendations are submitted and approved. If all requirements are met and the attraction is deemed compliant after inspection, RCI will issue a new certification valid for one year. To schedule the annual inspection, contact RCI's Training and Inspection Department.

2.6.3.2 ANNUAL INSPECTION AND RECERTIFICATION - BY RCI CERTIFIED INSPECTOR

If the site has a RCI certified Inspector, the annual inspection can be completed without contracting RCI. The RCI certified Inspector is responsible for ordering and purchasing all necessary inspection materials prior to completing the annual inspection and prior to any attraction certification expiration dates. The RCI certified Inspector is responsible for inspecting the attraction structure, safety equipment, signage, operations, and all documentation associated with the attraction. The RCI certified Inspector is also responsible for submitting all inspection documentation and pictures to RCI according to the instructions listed on the paperwork. Once received, RCI will process the submitted materials and if all inspection requirements are met, RCI will issue a new certification valid for one year. Not including all the required materials may result in a delay in processing time. RCI reserves the right to withhold the certification until proof of repairs/recommendations are submitted and approved. Refer to section 2.2.4 to learn more about the certification process and requirements for a RCI certified Inspector.

2.7 EMERGENCY ACTION PLAN (EAP)

A documented Emergency Action Plan (EAP) must be on hand in the event of an emergency. Sites are responsible for writing and maintaining an up to date EAP. RCI will not provide an EAP to any location. All staff members should know their role in the EAP and the EAP should be routinely practiced. At a minimum, this document should include evacuation routes, emergency contact numbers, and what to do in a medical or weather-related emergency. Medical emergencies may include but are not limited to heart attack, seizure, asthma attack or unconsciousness. Weather emergencies may include tornado warnings, lightning, earthquakes, or fires. Other situations that warrant the immediate evacuation of participants off of the Sky Trail® should also be included. Sites must write their own EAP and it must include at a minimum the following:

- Site address
- Site-specific emergency contacts
- Contact information for the nearest police department
- Contact information for the nearest paramedics
- Contact information for the nearest fire department
- Utility company emergency contacts
- Sky Trail® evacuation routes and procedures
- An emergency take down procedure that has been practiced with local emergency services (Fire, Police, Sheriff or another professional high angle rescue service)
- Weather procedures

*Note: An EAP must be posted near the Sky Trail® attraction or in a binder at the site location.

2.7.1 SKY TRAIL® EVACUATION

In the event of an attraction or facility emergency, an evacuation may be necessary. The documented evacuation plan must be part of the site specific EAP.

Special consideration must be made for the following:

- Location of evacuation meeting spots
- Individuals responsible for initiating the evacuation
- Coordination with outside agencies such as fire, police, paramedics, etc.
- Communication with Operators on the Sky Trail®
- Ingress and Egress for participants, personnel and equipment.

A Sky Trail® must be evacuated, at a minimum, for the following reasons:

- Immediately following an injury or medical emergency requiring emergency assistance.
- Facility emergencies such as a fire or weather related emergency.

Following an event such as this, the Sky Trail® must be evacuated and inspected for any hazardous conditions before it can be reopened. This type of evacuation does not have a time limit. Evacuation must be done in a safe, organized, and controlled manner.

It may not be possible to reopen the Sky Trail® if it was damaged during the emergency or subsequent evacuation. It is highly recommended that the Sky Trail® Owner consult with the local fire marshal for a timeline and evacuation routes.

2.7.1.1 SKY TRAIL® EVACUATION PROCEDURE

Facilities must include a specific evacuation procedure according to their site specifics in their EAP. All attraction personnel should be trained and aware of the evacuation procedure. Evacuation procedure must be practiced and documented on an on-going basis for the life of the Sky Trail®. Sky Trail® evacuations should occur using the following instructions in order:

1. Operators will blow their whistle to get participants' attention.
2. Shout, "This is an emergency evacuation! Please proceed to the exit stairs immediately!"
3. Shout, "Do not run!" as needed until the Sky Trail® has been evacuated.
4. Verify the Sky Trail® is clear before the last Operator exits.
5. Remove participants' trolleys from the overhead tracking and have them hold their slinglines.
6. Direct participants to the nearest exit or other safe location.
7. Operators should confirm that all participants have exited the attraction. Operators should not attempt to remove any equipment such as ETK's from the attraction during an evacuation.

2.7.1.2 SKY TRAIL® EVACUATION - SEVERE WEATHER

It is highly recommended that severe weather have its own set of documented evacuation criteria and procedures for outdoor Sky Trails®. When evacuating a Sky Trail® due to severe weather, RCI requires that the attraction must be fully evacuated in a timely, but safe manner. Severe weather may include the following situations:

- Winds above 45 mph
- Heavy rain
- Thunderstorms
- Any type of lightning within 10 miles of the Sky Trail®
- Extreme cold
- Extreme heat

*Note: Additional information regarding operating during severe weather can be found in section 3.5.

2.8 SAFETY REPORTS

If a reportable event occurs or in the event that an emergency rescue is performed on the Sky Trail®, RCI must be notified within seven days of the occurrence using the RCI safety report available on the RCI website.

The Operators on duty at the time of the incident are not required to file the report with RCI, but a responsible representative of the Sky Trail® or the Owner may file the report. Artifacts from the incident, including but not limited to, harnesses, equipment, photos and video surveillance of an incident must be preserved and submitted to RCI along with the safety report. Depending on the incident and the possible cause, RCI may require additional training at the expense of the Owner.

2.8.1 REPORTABLE EVENTS

Examples of events requiring a safety report to be filed with RCI include the following:

- Any injury or illness that required immediate first aid.
- If hospitalization is required, recommended or will be needed at a later date. (Examples: dislocated shoulder, a broken bone, or deep laceration.)
- Near misses or incidents that could have resulted in serious injury or death.
- Emergency take downs or rescues.
- Anything required to be reported by any government entity.

2.8.2 NON-REPORTABLE EVENTS

The following events do not require a safety report to be filed with RCI.

- A participant broke a rule and was not subsequently injured.
- Minor injuries as defined by the Manager. (Examples: bloody nose, reopened small cut, minor bruises.)

2.8.3 SAFETY REPORT FILING

RCI must be notified within seven days of the occurrence using the RCI safety report available on the RCI website. Failure to report incidents may result in the revocation of a certificate of operation by RCI or could require additional safety training by RCI at the expense of the Owner. All safety reports must be kept on file at the Sky Trail® location.

To file a safety report:

1. Navigate any browser to <https://rciadventure.com/client-portal/safety-report-form/>
2. Complete the step-by-step form.

3.0 OPERATING PROCEDURES

3.1 OPENING THE SKY TRAIL®

Each operational day, certified Operators are responsible for completing all daily opening duties for the attraction. Before opening the Sky Trail® to the public, the following steps must be completed by a certified Operator:

- Perform a daily pre-use inspection of the attraction and all safety equipment.
- Document the daily pre-use inspection on the Daily Checklist
- Ensure the appropriate number of Operators are present and outfitted appropriately.
 - A minimum of two Operators are needed in the event of an emergency, with at least one Operator on the ground and at least one Operator on the Sky Trail®.
 - Additional Operators may be required depending on the configuration of the Sky Trail® or depending on the presence of additional products.

OPENING THE SKY TRAIL® *CONTINUED*

- Remove the necessary Sky Trail® entrance barriers.
- Place ETK's in their designated locations.
- Set up queue lines in place if necessary.

The Daily Checklist is documentation that a daily pre-use inspection occurred and was completed by certified Operators. Operators are required to complete a new Daily Checklist prior to each operational day. Copies of all completed Daily Checklists should be kept and logged by the site. An example of the Daily Checklist can be downloaded from the Client Portal on RCI's website. Copies of the Daily Checklists may be requested by RCI at any time including during the Annual Inspection.

3.2 CLOSING THE SKY TRAIL®

At the close of business the Operators are responsible for closing the attraction per the guidelines in this manual. The attraction should be closed and securely locked to prevent any access. To close the Sky Trail®, the following steps must be completed:

- Ensure everyone is safely off the Sky Trail®.
- Secure and lock all entrance gates.
- Return all fences and barriers to their designated locations.
- Store all safety equipment properly according to section 2.5.6.

*Note: Proper cleaning procedures must take place before leaving the Sky Trail® if any safety equipment was soiled. Refer to section 5.1.2 for safety equipment cleaning procedures.

3.3 OPERATING STATIONS

The Sky Trail® should never be operated by one Operator alone. At least two Operators must be present in order to open to the attraction in case of any emergencies. The size of the Sky Trail® and the amount of participant traffic will dictate the number of Operators required. Sky Trail® operations can be broken down into three main stations:

1. Harnessing
2. Loading and Unloading
3. Operator on the Attraction

*Note: It is not a requirement to have three separate individuals to staff each station. The size of the attraction will dictate the number of Operators needed. However, all Operators must be able to perform the functions of all stations.

3.3.1 HARNESSING

All Sky Trails® should designate a specific area near the attraction for harnessing and de-harnessing participants. Only certified Operators or certified Harnessing Assistants are permitted to harness or de-harness participants.

HARNESSING *CONTINUED*

Participants are never allowed to harness themselves. Operators and Harnessing Assistants are responsible for selecting the appropriate harness for the participant and ensure that the harness fits correctly before allowing them on the Sky Trail®. Failure to properly harness the participant could result in serious injury or death. While harnessing participants, Operators must perform a brief pre-use inspection on the harnesses prior to each use to ensure it is still safe to use. RCI offers two styles of harnesses based on the specifications of the attraction. Refer to section 3.3.1.1 for the Trail Plus harnessing instructions and section 3.3.1.2 for the Trail harnessing instructions.

3.3.1.1 HARNESSING A PARTICIPANT-TRAIL PLUS HARNESS

Operators and Harnessing Assistants must follow the specific instructions in order below to correctly harness a participant using the Trail Plus style harness. For an instructional video on how to harness using the Trail Plus style, access the Client Portal or navigate any browser to, ropescourses.force.com/ClientPortal/s/article/How-to-Harness Please note the instructional video does not replace a physical training held by an RCI certified Operator Trainer.

Step 1

- The Operator or Harnessing Assistant will need to determine the participant's harness size. There are four options for this style of harness, extra small (green), small (silver), medium (red) and large (blue). They will need to choose the harness based on the participant's features such as height, frame, etc..
- Select the harness that fits best for the participant and bring it over to them. If the harness does not safely fit the participant, the Operator should size up or size down based on the previous attempt.



Step 2

- The Operator will hold the harness out to the participant with the front of the harness facing the Operator.
- The Operator will have the participant step into the harness by stepping over the yellow bar and into both leg loops.
- Once the participant has stepped through both leg loops, they should pull the shoulder straps up and over their shoulders.



Step 3

- The Operator will instruct the participant to hold the upper attachment loop of the harness to their belly button. This ensures that the harness is situated correctly on the participant prior to tightening. The participant should hold this in place until the Operator instructs them to let go.

HARNESSING A PARTICIPANT-TRAIL PLUS HARNESS *CONTINUED*



Step 4

- Once the upper attachment loop is held to the participant's belly button, the Operator will instruct the participant to turn around so their back is facing the Operator.
- The Operator will pull the yellow bar up to the top of the participant's shoulders. The yellow bar helps to ensure that the shoulder straps stay in place and do not fall off the shoulders.



Step 5

- The Operator will tighten the shoulder straps so that the waistband of the harness rests right above the hips.
- Confirm that there is at least two inches of slack in the webbing. If there is not at least two inches of slack, the Operator will need to choose a larger size harness size up.

Step 6

- Next, the Operator will tighten the participant's waist strap. The waist strap has two buckles and each side should be adjusted evenly.
- When properly tightened, the waist strap is not able to be moved around in excess.



Step 7

- The Operator will then tighten the leg straps so that they are snug on the participant's legs.
- Ensure the participant has proper circulation and is comfortable.

Once the harness is properly adjusted, the Operator must always check the final fit of the harness prior to allowing the participant on the attraction. Refer to section 3.3.1.1.1 for instructions on how to check the fit of the harness.

3.3.1.1.1 CHECKING THE FIT OF THE TRAIL PLUS HARNESS

The Operator must always check the final fit of the harness prior to allowing the participant on the attraction. Check the following components:

- Ensure no part of the harness is twisted.
- Ensure that the participant stepped completely through each leg loop.
- The yellow bar is pulled up to the appropriate height.
- The shoulder straps cannot be pulled off of the participant's shoulders.
- The waist strap is snug.
- The leg straps are snug.
- At least 2" of webbing must be pulled through the buckles at any location on the harness. If less than 2" of webbing cannot be pulled through, the participant will need a larger harness or will not be permitted to go on the Sky Trail®.
- If the carabiners are pre-loaded onto the harness, ensure that the carabiners are attached to the correct attachment loops.

If any of the following components are found to be incorrect, the Operator will need to adjust and reinspect prior to allowing the participant on the attraction.

3.3.1.1.2 UNHARNESSING A PARTICIPANT-TRAIL PLUS HARNESS

Once the participant has finished and has exited the attraction, the Operator or Harnessing Assistant must remove the participant's harness. To remove a harness, loosen the straps in the reverse order of when they were harnessed. All straps on the harness should be "zeroed out" prior to storing the harness. This means that the straps are completely loosened and can be ready for the next participant.

Step 1

- Loosen the leg straps.

Step 2

- Loosen the waist straps.

Step 3

- Loosen the shoulder straps.

Step 4

- Carefully pull the yellow bar all the way down to the waist of the harness.

Step 5

- Instruct the participant to carefully step out of the harness.

Step 6

- The Operator must ensure that all straps have been zeroed out prior to hanging the harness back up.

3.3.1.2 HARNESSING A PARTICIPANT-TRAIL HARNESS

Operators and Harnessing Assistants must follow the specific instructions in order below to correctly harness a participant using the Trail style harness.

Step 1

- The Operator or Harnessing Assistant will need to determine the participant's harness size. There are three options for this style of harness, small, medium, and large. They will need to choose the harness based on the participant's features such as height, frame, etc..
- Select the harness that fits best for the participant and bring it over to them. If the harness does not safely fit the participant, the Operator should size up or size down based on the previous attempt.

Step 2

- The Operator should put the harness on the participant like a backpack, with the D-ring positioned on their upper back



Step 3

- Fasten and adjust the chest strap. The strap should rest in the middle of the participant's chest and should be snug.

HARNESSING A PARTICIPANT-TRAIL HARNESS *CONTINUED*



Step 4

- The Operator will adjust the shoulder straps. Shoulder straps should be snug and should not fall off the participant's shoulders when properly fitted.



Step 5

- The Operator will then fasten and adjust the leg straps so they fit snug around the participant's legs. Leg straps should fit around the legs so they hug the seat of the participant and do not droop down.

Once the harness is properly adjusted, the Operator must always check the final fit of the harness prior to allowing the participant on the attraction. Refer to section 3.3.1.2.1 for instructions on how to check the fit of the harness.

3.3.1.2.1 CHECKING THE FIT OF THE TRAIL HARNESS

The Operator must always check the final fit of the harness prior to allowing the participant on the attraction. Check the following components:

- Ensure no part of the harness is twisted.
- Ensure that the participant stepped completely through each leg loop.
- The shoulder straps cannot be pulled off of the participant's shoulders.
- The leg straps are snug.
- At least 2" of webbing must be pulled through the buckles at any location on the harness. If less than 2" of webbing cannot be pulled through, the participant will need a larger harness or will not be permitted to go on the Sky Trail®.
- All buckles should be fully closed and cannot be pulled apart.
- The metal rings should be able to touch and not pinch any part of the participant.

If any of the following components are found to be incorrect, the Operator will need to adjust and reinspect prior to allowing the participant on the attraction.

3.3.1.2.2 UNHARNESSING A PARTICIPANT-TRAIL HARNESS

Once the participant has finished and has exited the attraction, the Operator or Harnessing Assistant must remove the participant's harness. To remove a harness, loosen the straps in the reverse order of when they were harnessed. All straps on the harness should be "zeroed out" prior to storing the harness. This means that the straps are completely loosened and can be ready for the next participant.

Step 1

- Undo the leg buckles.

Step 2

- Undo the chest buckle.

Step 3

- Carefully remove the harness from the participant.

Step 4

- The Operator must ensure that all straps have been zeroed out prior to hanging the harness back up.

3.3.2 LOADING AND UNLOADING

The loading and unloading station is located at the entrance of the Sky Trail®. Only a certified Operator is allowed to load a participant onto the Sky Trail®. Harnessing Assistants are not permitted to load and unload participants. Participants are never allowed to load or unload themselves. The loading Operator is stationed at the entrance/exit and never leaves it unattended while the Sky Trail® is in operation. Operators must properly inspect all slinglines and trolleys prior to use. Failure to inspect the slingline and trolley before loading could result in serious injury or death. Failure to properly attach the slingline to the participant's harness could result in serious injury or death.

RCI offers two styles of slinglines based on the specifications of the attraction and the style of harness. Refer to section 3.3.2.1 for the SRS style slingline instructions and section 3.3.2.2 for the single adjustable style slingline instructions.

3.3.2.1 ATTACHING THE SINGLE REDUNDANT SLINGLINE (SRS)-TRAIL PLUS HARNESS



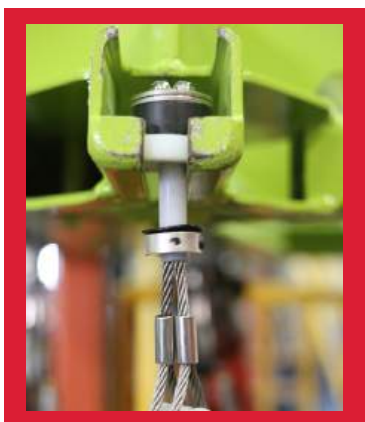
Sites that do not have a Safety Entrance and are using the SRS slinglines and Trail Plus harnesses will need to use a SRS adjustment guide sticker in order to correctly connect a participant. Sites that have a Safety Entrance may not need to use the SRS adjustment guide sticker, refer to section 2.4.2 for more information. The SRS adjustment guide sticker is a guide used to determine the correct loops of the SRS slingline to connect the participant to. Each participant may vary based on their height, so it is necessary to use this guide sticker for each participant that wishes to go on the attraction. The SRS adjustment guide sticker must be installed at the entrance columns of the attraction.

To install the SRS adjustment guide sticker, measure from the ground up, make a mark at 48 inches high on the side of the entrance. Line up the 'Install this line at 48"' and your pre-marked spot, adhere the sticker carefully and straight to the entrance column.

After the SRS adjustment guide sticker has been correctly installed, use the following instructions to connect a participant. For ease of use, it is recommended that the carabiners be stored on the harness versus on the slingline. Each harness should have two locking carabiners (one on the upper attachment loop and one on the lower attachment loop).

For an instructional video on how to load using the SRS style, access the Client Portal or navigate any browser to, ropescourses.force.com/ClientPortal/s/article/How-to-Install-SRS Please note the instructional video does not replace a physical training held by an RCI certified Operator Trainer.

*Note: Sites that have a Safety Entrance installed should refer to the additional product manuals in order to correctly load a participant based on the style of Safety Entrance. The steps listed below are for sites that do not have a Safety Entrance installed. Additional Instructional Videos are available on the RCI Client Portal on how to load using the Safety Entrance.



Step 1

Load the trolley into the overhead track by inserting the white split puck into the overhead track. Always ensure that the white split puck is safely in the overhead track before connecting a participant.

ATTACHING THE SINGLE REDUNDANT SLINGLINE (SRS)- TRAIL PLUS HARNESS *CONTINUED*



Step 2

Position the participant directly underneath their trolley hanging in the overhead tracking and have them stand next to the SRS adjustment guide sticker.



Step 3

- On the sticker, each loop is numbered. Line the upper attachment loop on the participant's harness with a corresponding loop on the SRS sticker and note the number.
- The lower attachment loop will always be the next sequential number i.e. if the upper attachment loop lines up with 3 on the sticker, the lower attachment loop will be 4 and will not skip a number.

Step 4

- Pull the slingline through the chest loop of the participant's harness.



Step 5

- Count down from the uppermost loop on the participant's slingline until reaching the loops identified from the SRS sticker in step 2.
- Connect each corresponding loop on the slingline to the attachment points on the harness using two separate locking carabiners.



Step 6

- Confirm that the carabiners are in the right order according to the guide sticker and that they are each only attached to one loop on the harness.
- Ensure that the carabiners are not twisted or connected together and are both locked.

ATTACHING THE SINGLE REDUNDANT SLINGLINE (SRS)- TRAIL PLUS HARNESS *CONTINUED*

Step 7

Operators must perform a Pre-Flight Check on every participant before they begin the activity. The Pre-Flight Check includes checking the fit of the harness, attachment of the slingline, and reciting the rules. Refer to section 3.3.2.3 to learn more about the required Pre-Flight Check.

3.3.2.2 ATTACHING THE SINGLE ADJUSTABLE SLINGLINE -TRAIL HARNESS

Sites that use the single adjustable slingline with the trail harness should use the following instructions to correctly connect a participant.

Step 1

Have the harnesssed participant stand at the entrance of the attraction.



Step 2

- The Operator will push the loop end of the sling line through both metal rings on the front of the Trail Harness.
- Ensure that the metal rings are not twisted.



Step 3

Once the loop is through both metal rings, pull the trolley through the loop.

ATTACHING THE SINGLE ADJUSTABLE SLINGLINE -TRAIL HARNESS *CONTINUED*



Step 4

Pull the slingline completely through the loop until the webbing is tightened all the way down onto both of the metal rings.

Step 5

Load the trolley into the overhead track by inserting the white split puck into the overhead track. Always ensure that the white split puck is safely in the overhead track before allowing the participant to go on the attraction.

Step 6

Once the split puck is inserted into the overhead track, adjust the participant's slingline to the appropriate length. To adjust, have the participant stand approximately 10-12" away from the trolley in the overhead track. When pulled away perpendicular from the participant's body, the sling line should form an "L" shape. The slingline must not droop below the participant's waist or be too tight. If the slingline is adjusted too tight, they may not be able to cross certain elements on the attraction. The Operator should slide the buckle up or down to make an adjustment in the slack of the slingline.

Step 7

Operators must perform a Pre-Flight Check on every participant before they begin the activity. The Pre-Flight Check includes checking the fit of the harness, attachment of the slingline, and reciting the rules. Refer to section 3.3.2.3 to learn more about the required Pre-Flight Check

3.3.2.3 PRE-FLIGHT CHECK

After a participant has been harnessed and connected to a slingline, the Operator must perform a Pre-Flight Check on each and every participant before they are allowed onto the attraction. All sites must have a Pre-Flight Check sticker installed at the entrance of their attraction.

The Pre-Flight Check sticker varies based on the style of safety equipment, so ensure that the correct sticker is installed.

3.3.2.3.1 PRE-FLIGHT CHECK-SRS SLINGLINE AND TRAIL PLUS HARNESS



Pictured are the verbal and physical checks when using the Trail Plus harness and SRS that must be completed by the loading Operator before they allow any participants onto the attraction.

- Check the fit of the harness.
- Squeeze check each carabiner.
- Recite the participant behavior policies:
 - Pockets must be empty
 - No running, jumping, or swinging.
 - One person at a time on an element.
 - Do not touch the overhead track.
 - Keep slingline in between shoulders

3.3.2.3.2 PRE-FLIGHT CHECK-SLINGLINE ADJUSTABLE SLINGLINE AND TRAIL HARNESS



Pictured are the verbal and physical checks when using the Trail harness and Single Adjustable slingline that must be completed by the loading Operator before they allow any participants onto the attraction.

- Check the fit of the harness.
- Pull up on slingline until taut.
- Recite the participant behavior policies:
 - Pockets must be empty
 - No running, jumping, or swinging.
 - One person at a time on an element.
 - Do not touch the overhead track.
 - Keep slingline in between shoulders.

3.3.3 OPERATOR ON THE SKY TRAIL®

Operators on the Sky Trail® must constantly monitor for situations or behavior that may cause safety concerns and help participants that need assistance by acting in a timely manner. Operators are encouraged to move around the Sky Trail® and engage with the participants. It is not recommended that the Operator on the Sky Trail® remain stationary. It is the responsibility of the Operator on the Sky Trail® closest to the participant in need to make the determination if there is an emergency situation and if so, to alert the other Operators and emergency services if necessary.

Operators on the Sky Trail® must be:

- Outfitted safely and securely with the correct harness
- Equipped with an orange (staff) slingline
- Equipped with a whistle

*Note: If radios are used, they must be safely secured to the Operator. Basic belt clips are not acceptable, and the Operator must be able to use the radio without the radio being untethered from their harness.

3.3.3.1 OPERATOR ON THE SKY TRAIL® STAFF NUMBERS

The number of certified Operators needed on the Sky Trail® is determined by the size and throughput of a Sky Trail®. There must be at least one certified Operator within one level of every participant on the Sky Trail®. There must also always be at least one certified Operator on the ground at all times during operation. The entrance to the Sky Trail® should never be left unattended. All Operators must wear a harness at all times in case of emergency.

At a minimum there must be the following:

One level Sky Trail®:

- Minimum of two Operators. One on the Sky Trail® and one on the ground.

Two level Sky Trail®:

- Minimum of two Operators. One on the Sky Trail® and one on the ground.

Three level Sky Trail®:

- Minimum of two Operators. One on the Sky Trail® and one on the ground.

Four level Sky Trail®:

- Minimum of three Operators. Two on the Sky Trail® and one on the ground.

Five level Sky Trail®:

- Minimum of three Operators. Two on the Sky Trail® and one on the ground.

*Note: Custom Sky Trails® or Sky Trails® with additional features may require additional Operators. Refer to the other volumes of this manual for staffing requirements.

3.4 WEATHER AND ELEVATION

A safe environment for Sky Trail® participants and personnel must be maintained. It may be necessary to close some portions or features of the Sky Trail® during certain weather conditions. All Operators must be trained on the weather procedures in the event of severe weather conditions. Severe weather procedures should also be included in the site specific Emergency Action Plan.

*Note: RCI recommends stating the facility's weather policy on its website as well as near the Sky Trail® to

3.4.1 WIND

While a Sky Trail® is designed to withstand very high winds, it is not safe to operate in extreme wind conditions (winds exceeding 45mph). If winds exceed 45 mph during operation, the attraction must be evacuated.

In order to operate when winds are below 45mph, follow these conditions:

- Participants must be made aware of the conditions prior to getting on the attraction.
- There can be no flying objects or debris.
- The winds cannot be strong enough to blow participants off elements or platforms.
- Operators must still be able to clearly communicate at all times.

3.4.2 RAIN

A Sky Trail® can be operational during rainy weather. Special considerations in rainy weather are:

- The rain may cause the attraction surfaces to become slippery. Operators must notify all participants to be more cautious on slippery surfaces.
- Operators must allow all safety equipment to dry completely before storing.

3.4.3 THUNDERSTORMS

A Sky Trail® must not be operated when lightning is within 10 miles of the structure. Operators should regularly check weather sources and radar to monitor approaching severe weather. Hearing thunder indicates that lightning is within 10 miles. When lightning is within 10 miles, all participants must be evacuated immediately and directed to shelter. In the event of an evacuation, Operators should not remove any safety equipment from the Sky Trail® such as ETK bags or slinglines hanging at the entrance as it could be dangerous to go on or near the attraction during a thunderstorm event. Participants are allowed back on the attraction 30 minutes after the last thunderclap is heard or when radar indicates that lightning is greater than 10 miles away.

Operators should perform a pre-use inspection of the attraction and safety equipment prior to allowing participants back on the Sky Trail®. All safety equipment must be allowed to dry completely before storing it at the end of the operational day.

*Note: In the event that someone is injured by a lightning strike, immediate medical attention is necessary. Call 911. For more information about lightning, visit NOAA at www.lightningsafety.noaa.gov.

3.4.4 EXTREME COLD OR EXTREME HEAT

A Sky Trail® can be operated in cold weather, even snow, however, adhere to the following precautions:

- The harness must fit appropriately over top of all clothing, this includes jackets and coats.
- Participants must take care when wearing gloves as their grip may not be as strong or secure as usual due to cold temperatures.
- Operators must warn participants of possible icy and slippery conditions while on the attraction. Participants must be encouraged to move at a slower, more cautious pace.

In extreme heat, the following precautions must be observed:

- Pay special attention to participants on days that are above average temperatures. Be aware of the signs of dizziness or dehydration. If someone shows signs of dizziness or dehydration, do not allow them to continue and safely escort them to the nearest exit when they are stable.
- Operators and participants must stay hydrated. Allow personnel and participants to take necessary breaks to get water.
- Operators are encouraged to rotate on and off the Sky Trail® regularly as to not be stationed in the same spot for extended periods of time.

3.4.5 HIGH ALTITUDES

Operation of the Sky Trail® is not limited by elevation or altitude. However, for attractions located at high altitudes, RCI recommends reminding Operators and participants who may not be acclimated, to be cautious of altitude effects. Operators should be aware of the signs of altitude sickness. If anyone shows signs of altitude sickness, such as headaches, dizziness or vomiting, immediately do the following:

- Go to that participant and get them to a platform.
- Allow them to temporarily sit in their harness.
- Notify staff on the ground of the situation and ask them to safely bring water up to the participant.
- Do not allow them to continue on the Sky Trail®.
- Escort them to the nearest exit and off the Sky Trail® when they are stable.
- Contact medically trained staff to attend to them.
- Fill out a safety report.

3.5 PARTICIPANT ASSISTS AND RESCUES

Emergencies may arise on a Sky Trail® and can be sudden and unexpected occurrences that demand immediate action to maintain safety. Not all scenarios may require the execution of the site's Emergency Action Plan. Operators are responsible for determining if a participant simply needs routine assistance while on the attraction or if a participant requires medical attention. Operators must be trained on how to assist participants in both scenarios to better be prepared should an emergency arise.

3.5.1 ASSISTING PARTICIPANTS

Some issues can be resolved using the following techniques when assisting participants in certain situations. The Operator on the Sky Trail® attraction must always be aware of all participants and quickly assist if anyone is needing assistance or is simply scared.

3.5.1.1 NERVOUS OR SCARED PARTICIPANT

- The Operator should ask the participant if they need assistance and talk in a calm, reassuring voice.
- Give words of encouragement or ask simple 'yes' or 'no' questions.
- Encourage participants to try an easier element.
- Assist them across the element to help them gain confidence.
- Help them to the nearest exit if they wish to get off the attraction.

3.5.1.2 REACHING OUT A HAND

Participants who are having trouble reaching a platform, have become exhausted, or are mentally drained, may require physical assistance.

- The Operator should ask the participant if they need assistance.
- Offer them a hand for balance or emotional support.
- If the participant declines assistance, let them know you are there to help if needed.
- If the participant is exhausted, recommend that they either take a quick break on the platform, or offer to help them exit the attraction.

3.5.1.3 APPROACHING UNRULY PARTICIPANTS

- The Operator should inform the participant that they are breaking the rules.
- If the participant disregards the first warning, notify the participant that they must exit the attraction immediately.
- If the participant does not exit the attraction on their own, the Operator should safely escort them off.
- The Operator can call for assistance from management if necessary.

3.5.1.4 PARTICIPANT URINATES WHILE ON THE SKY TRAIL®

- Temporarily close the specific area where the participant urinated.
- Safely escort the participant off the attraction.
- Remove the harness from the participant.
- Clean the harness immediately. Refer to section 5.1.2 for cleaning instructions.
- Clean any urine off of the Sky Trail® as soon as possible.

3.5.2 PARTICIPANT RESCUES

3.5.2.1 MEDICAL EMERGENCIES

A medical emergency can be a life-threatening condition. A person who is conscious may still be having a medical emergency. If someone has been hanging in their harness for more than 10 minutes they run the risk of blood pooling in their legs. When this occurs, the participant may experience a condition called orthostatic intolerance which can cause the following symptoms: faintness, nausea, breathlessness, dizziness, sweating, paleness, unusually low blood pressure or heart rate, hot flashes, and/or loss of vision.

To reduce the risk of orthostatic intolerance, participants should be told to move their legs to help force blood flow. Additionally, they should be supported or lifted in a manner that reduces the pressure of the harness on their legs. If it is safe to do so, Operators should move the legs of unconscious participants to help keep their blood flowing and provide as much support as possible.

MEDICAL EMERGENCIES *CONTINUED*

Once rescued from the Sky Trail®, the participant should be closely monitored for delayed effects. For more information about orthostatic intolerance, reference the OSHA safety bulletin on this topic: <https://www.osha.gov/dts/shib/shib032404.html>

When there is a medical emergency or other immediate danger that prevents a participant from exiting the Sky Trail® in a normal manner, it is necessary to carry out the site's documented Emergency Action Plan (EAP). It is important that the proper emergency contacts be posted near the attraction and in the EAP. RCI recommends that each site consult their local emergency services teams to prepare a rescue procedure before an emergency occurs and to practice the procedure on a routine basis.

*Note: Operators should know their limitations before attempting to lift participants who are much larger than they are.

3.5.2.2 EMERGENCY TAKE DOWNS (ETD)

An Emergency Take Down (ETD) is the act of belaying an individual off the attraction in the event of a medical emergency. Only the most extreme scenarios require an ETD. When there is a medical emergency, an immediate danger to someone or someone has been hanging in their harness for more than two minutes, an ETD is necessary. A medical emergency can be defined as an unconscious participant or a life-threatening condition. A person may still be conscious and be having a medical emergency. For example, someone who is highly allergic to bees may have a constricted airway after being stung, which can lead to asphyxiation. Likewise, someone who is bleeding profusely is in danger of losing too much blood. Participants should not be allowed to hang motionless in their harness for longer than 2 minutes. Suspension trauma known as orthostatic shock, also known as harness hang syndrome (HHS), has been recorded in as little as 3.5 minutes and as much as 20 minutes.

"HHS, the rapid loss of consciousness followed by death due to hanging immobile in a harness, happens in ALL harnesses and ascending systems." (Ivy, Joe . "Harness Hang Syndrome: Fact and Fiction." Outdoorswa. N.p., n.d. Web. 20 Dec. 2016). It is due to this reason that Sky Trail® Operators are expected to be able to perform an ETD in under 2 minutes. Loss of consciousness from HHS is often due to blood pooling in the lower extremities, and blood pooling eventually leads to lack of blood flow to vital organs, such as the brain, that fail due to insufficient oxygen. RCI requires Owners to enforce Operators to practice ETD procedures regularly in order to prevent unnecessarily wasted time in real-life emergency situations. In many emergencies rapid response is key.

3.5.2.2.1 EMERGENCY TAKE DOWN KIT (ETK)

The Emergency Take Down Kit (ETK) is a packaged kit used when completing an ETD in the event of a medical emergency (if deemed necessary by certified Operators). ETK's are required to be placed by a certified Operator on the Sky Trail® in designated locations every day prior to opening the attraction. It is critical that all components of the ETK be inspected and repacked by a certified Operator prior to being used. Refer to section 3.5.2.2.2 on how to use the ETK during an ETD.

3.5.2.2.2 EMERGENCY TAKE DOWN PROCEDURE

An ETD is only performed in case of a medical emergency. At least three people are needed for this procedure. A certified Operator on the Sky Trail® attraction, a certified Operator on the ground, and a guide rope assistant (this position does not need to be a certified Operator). Follow the instructions listed below in order to complete an ETD. In the following steps, the Operator on the attraction will be identified as the "top Operator" and the Operator on the ground will be identified as the "bottom Operator".

For an instructional video on how to perform an Emergency Take Down, access the Client Portal or navigate any browser to ropescourses.force.com/ClientPortal/s/article/Emergency-Take-Down. Please note the instructional video does not replace a physical training held by an RCI certified Operator Trainer.

Step 1

- The Operator should identify if the participant is experiencing a medical emergency and should determine if an ETD is necessary. Most commonly this is identified by the top Operator as they should be monitoring all participants while on the attraction.
- If an ETD is deemed necessary, the top Operator will begin the process by blowing their whistle and yelling, "All participants to the closest platform" and instruct someone on the ground to call 911 or emergency services immediately.

*Note: Do not instruct the bottom Operator to call 911 as they will have other immediate responsibilities.

Step 2

TOP OPERATOR

- After the top Operator has notified everyone of the situation, they will safely run to the nearest ETK. The top Operator will place the ETK in front of their slingline and bring it to the platform nearest to the participant.

BOTTOM OPERATOR

- While this is taking place, the bottom Operator will safely run and grab the bottom belay attachment and position themselves underneath the participant and will await instruction from the top Operator.

*Note: Be sure that the Operator on the ground is not leaving the Sky Trail® entrance unattended. If necessary, request that temporary personnel stand at the entrance to prevent any unharnessed guests from entering until the Operator can return to their station.

EMERGENCY TAKE DOWN PROCEDURE *CONTINUED*

Step 3

- While still on the platform, the top Operator will unclip only the bag handle from the steel carabiner and loop through their arm to secure. They will undo the drawstring on the side of the bag. All of this should be done while still on the platform. Then, the top Operator will walk out to the participant with the ETK in front of their slingline until all RSAs are touching.

Step 4

- The top Operator will ask the bottom Operator if it is clear to drop the bag by saying, "Rope". The bottom Operator will make sure to clear the area of any guests or obstacles before instructing the top Operator that it is clear. Once clear, the bottom Operator will say, "Clear!". Now, the top Operator can drop the bag.
- Once the bag hits the ground, the bottom Operator will grab both ropes with one hand and throw the bag behind them with the other hand to expose all of the ropes.

Step 5

TOP OPERATOR

- The top Operator will carefully remove the scissors from the carabiner and safely secure them until needed. Then the top Operator will pass both carabiners behind the chest loop of the participant and attach the rescue carabiner (either the Omega Jake carabiner or the Petzl Am'D carabiner) to the upper attachment loop. Next, they will remove any slack from the rope and ensure the ropes are tight.

BOTTOM OPERATOR

- Simultaneously, the bottom Operator will loop the rescue rope through the aluminum figure 8 and attach to the lower attachment loop of their harness. Remove all slack and ensure the rope is as tight as possible. The bottom Operator will then use their brake hand to lock the rope in place on the side of their hip.

Step 6

TOP OPERATOR

- Once connection is made and all slack is removed, the top Operator will yell to the bottom Operator, "On Belay!".

BOTTOM OPERATOR

- Once connection is made, all slack is removed, and the rescue rope is locked in place at their hip, the bottom Operator will reply, "Belay On!"

Step 7

BOTTOM OPERATOR

- The bottom Operator will yell to the top Operator, "Check 1".

TOP OPERATOR

- Then, the top Operator will physically squeeze both aluminum carabiners to ensure they are securely attached. Once confirmed, they will yell, "Check!".

EMERGENCY TAKE DOWN PROCEDURE *CONTINUED*

Step 8

BOTTOM OPERATOR

- The bottom Operator will yell, "Check 2".

TOP OPERATOR

- Then, the top Operator will physically squeeze the steel carabiner attached to the figure 8 to ensure it is locked. They will also check that the figure 8 is not twisted (if twisted, spin to untwist). Once confirmed, they will yell, "Check!".

Step 9

The bottom Operator will yell, "Check 3!". They will physically squeeze the carabiner with their non-brake hand and yell "Check!"

Step 10

The bottom Operator will yell "Check 4!". They will look to make sure the ropes are free of obstacles and that no-one is standing on them. They will also hand the guide rope to a willing participant and instruct them to pull when told. Then they will yell, "Check!"

Step 11

BOTTOM OPERATOR

- Once all four checks are completed, the bottom Operator will yell, "Cut!".

TOP OPERATOR

- The top Operator will cut the participant's slingline using the safety scissors that they secured earlier in step 5.
- Make sure to cut the slingline through the thinnest portion of the webbing and away from the participant.

*Note: For training and practice purposes, do not cut any slinglines. Simply disconnect both carabiners from the harness at this step.

Step 12

TOP OPERATOR

- Once the participant is cut free from their slingline, the top Operator will yell, "Descending!"

BOTTOM OPERATOR

- The bottom Operator will then yell, "Descend on!". Making sure the brake hand is still in place and secure.

Step 13

BOTTOM OPERATOR

- The bottom Operator will slightly remove tension from their brake hand as the rescue rope feeds through the aluminum figure 8. Make sure to never let go with your brake hand. Lower the participant at a safe speed for their safety.
- The guide rope assistant will then pull the guide rope to ensure the participant is pulled away from the attraction and any other obstacles in the vicinity.

TOP OPERATOR

- The top Operator will make sure the participant does not hit their head on the way down.

EMERGENCY TAKE DOWN PROCEDURE *CONTINUED*

Step 14

- Once the participant has safely reached the ground, the bottom Operator will unhook the rescue carabiner from their harness. Emergency services can then take over the situation. Do not attempt to remove the participant's harness.

Step 15

- Once the participant has been taken from the scene by emergency services, the Operators will need to repack the ETK.
- The bottom Operator will remove both aluminum carabiners from the ropes and feed the rescue rope to the top Operator.
- The top Operator will feed the rescue rope through the steel figure 8 and lower the end of the rope down hand over hand to the bottom Operator.

*Note: Never intentionally drop any components of the ETK onto the ground as it may cause unnecessary damage to the safety equipment.

- Once the rope is on the ground, the bottom Operator can repack the ETK.
- The top Operator will safely bring down the ETK, RSA, and the participant's slingline. Once the bag is repacked and inspected, place it back onto the attraction.

3.5.2.2.3 EMERGENCY TAKE DOWN PRACTICE

All Sky Trail® Operators should practice ETD procedures regularly. RCI recommends that new staff practice the emergency procedures daily for the first couple of weeks of operating an attraction. Once Operators are fully competent in these procedures, RCI requires that ETD's be practiced on a monthly basis and keep a log of all practices. Supervisors and/or Operator Trainers should be present for all practices and should continue to monitor their staff's abilities to perform an ETD quickly and proficiently.

3.5.2.2.4 NOTIFICATION OF EMERGENCY OR INJURY

If a reportable injury occurs or in the event that an ETD is performed on a Sky Trail®, RCI must be notified within seven days of the occurrence. A reportable injury may be defined as an injury that requires medical attention. Failure to do so may result in the revocation of your attraction, certificate of operation by RCI, or could require additional safety training by RCI at the cost of the Owner. Refer to section 2.8 for instructions on how to file a safety report with RCI.

4.0 INSPECTION

Routine inspection is essential for the safe function of a Sky Trail®. This includes a daily pre-use inspection, a detailed quarterly inspection, and an annual inspection with recertification.

*Note: Inspection of the Sky Trail® structure and components requires working at height on the elements and platforms. Be sure to follow OSHA and local guidelines for working at height.



4.1 DAILY PRE-USE INSPECTION

A daily pre-use inspection of the Sky Trail® and safety equipment must be completed each operational day by a certified Operator before participants are allowed on the attraction. Only certified Operators are qualified to complete the daily pre-use inspection. The daily pre-use inspection is a visual and tactile inspection of the attraction structure and all safety equipment to ensure that the attraction and safety equipment are safe to use. It must be documented on a site-specific daily checklist and kept on file at the facility. The daily pre-use inspection could take anywhere from 30 minutes to an hour or more depending on the size of the Sky Trail® and the number of Operators conducting the inspection. The location should account for the time it takes to complete the daily pre-use inspection when scheduling staff. There should always be more than one certified Operator on-site during opening inspections to assist in the event of an emergency.

During the daily pre-use inspection, all safety equipment should be inspected and all ETK's should be inspected and repacked. Any safety equipment that does not pass inspection should be removed from service, notated on the daily inspection checklist, and a manager should be notified. The daily pre-use inspection also includes the attraction structure. The entire attraction must be cycled by an Operator, meaning that each element, platform, and incline must be crossed and inspected, and any additional features on the attraction must be tested. Any element that is deemed unsafe must be closed off using track stops, documented on the daily checklist including the location of where the issue was found, and a Manager should be notified. All daily checklists must be retained in a binder that is easily accessible to the Operators. These checklists should be reviewed by a Manager on a daily basis to ensure that any issues are addressed in a timely manner. All past daily checklists must be kept on site and retained. Copies of these checklists may be requested by RCI at any time including during the Annual Inspection.

*Note: The Daily Checklist can be downloaded from the Client Portal on the RCI website.

DAILY PRE-USE INSPECTION CRITERIA

Per ASTM F770, Sky Trail® owners are required to have site-specific inspection criteria. To aid in the development of said criteria, RCI recommends that the following components, at a minimum, be inspected and documented on a daily basis. For sites with custom features or components, there will be additional items that must be inspected on a daily basis. Moreover, sites with multiple features should consult the other volumes of the manual to find the inspection criteria for each of those components.

RCI requires that the following be inspected and documented on a daily basis:

- Date of pre-use inspection
- Manager on-site
- Operators on-site, including a record of who completed the daily checklist
- Operating conditions
 - Temperature (if attraction is located outdoors)
 - Wind Speed (if attraction is located outdoors)
 - Other factors (rain, snow, etc.)
- Type of structure being inspected, if multiple structures are on site
- Sky Trail® opening steps
 - Entrance barriers removed
 - Safety equipment set-up for the day
 - Safety rules posted and visible
- Functionality check of the attraction by a certified Operator, meaning that each element must be crossed and inspected, and all additional features on the attraction must be inspected and tested.
- Safety equipment inspection per section 4.4
- Structural inspection per section 4.5
- Sky Trail® closing steps
 - Safety equipment removed from the attraction and stored properly
 - Entrance locked and all entrance barriers returned to designated location
 - Any incidents documented and completed safety reports filed
 - Any maintenance or repairs on the attraction and/or safety equipment documented

*Note: Refer to sections 4.4 and 4.5 for detailed inspection criteria for Sky Trail® attraction structure and safety equipment. The Daily Checklist can be downloaded from the Client Portal on the RCI website.

4.2 QUARTERLY INSPECTION

When a Sky Trail® attraction is open and operational, a quarterly inspection is required. A quarterly inspection, conducted by a certified Operator or RCI certified Inspector each quarter, includes a more thorough inspection of the Sky Trail® attraction, safety equipment, and all attraction documentation. This inspection must be documented on a quarterly inspection checklist which also includes an equipment log. All quarterly inspection checklists must be retained in a binder that is easily accessible to the Operators performing the inspection. Copies of these quarterly inspection checklists may be requested by RCI at any time including during the Annual Inspection.

During the quarterly inspection, all safety equipment must be inspected and all equipment inventory logs must be maintained and updated. The quarterly inspection involves the inspection of 25% of the trolleys on site for wire breaks in the wire rope assemblies. RCI recommends inspecting different trolleys each quarter so that by the fourth quarter of the year, the wire assemblies of 100% of the trolleys will have been inspected. This inspection is more involved than a daily pre-use inspection, as the cable sleeve must be removed so that all wires can be inspected. All trolleys inspected and disassembled must be documented according to their specific serial number.

*Note: Refer to section 5.1 for instructions on how to disassemble the trolleys to complete the quarterly inspection.

In addition to the safety equipment inspection, all documentation for the quarter must be reviewed including:

- Verifying all personnel of the attraction have a current and valid certification.
- Daily inspection checklists for each operational day must be completed and filed
- Emergency take down practice logs must be up to date
- Emergency Action Plan training log must be up to date

4.3 ANNUAL INSPECTION AND RECERTIFICATION

An annual inspection of a Sky Trail® is a very thorough and detailed examination of all components of the attraction, including the attraction structure, all safety equipment, and all attraction documentation. Following the commissioning inspection, RCI will issue a certificate to operate for each RCI attraction that has been inspected and determined to be in compliance with all requirements and as a result, safe to operate. The initial certificate to operate is valid for one year from the date of issue. To verify compliance with the RCI requirements for the safe operation of the Sky Trail®, the attraction must be inspected and subsequently re-certified on an annual basis. The annual inspection must be performed by a RCI certified Inspector. During the use of a Sky Trail®, components will become worn and items will need routine maintenance. It is the responsibility of the certified Inspector to locate any potential issues and start a plan for the continued safety of all personnel and participants.

ANNUAL INSPECTION AND RECERTIFICATION *CONTINUED*

The annual inspection involves, at minimum, the following criteria:

- Inspecting the attraction structures to ensure they are safe to operate according to the inspection guidelines in this manual. Refer to section 4.5 for structural inspection requirements.
 - a. Any issues or recommendations found during the annual inspection must be corrected immediately. RCI may require that proof of correction be submitted to RCI prior to issuing a new certificate to operate.
- Inspecting and documenting any attraction structure modifications.
 - a. This includes any new element layouts, additions, etc.
- Inspecting all attraction signage according to the guidelines in this manual. Refer to section 2.4 for signage requirements.
- Inspecting all safety equipment to ensure that it is safe and functional according to the inspection guidelines in this manual.
 - a. Any issues or recommendations found during the annual inspection must be corrected. Any safety equipment that is in need of repairs or deemed as failed must be documented. Refer to section 4.4 for safety equipment guidelines.
- Safety equipment inventory logs must be up to date and accurate with the following information at minimum:
 - a. Serial number
 - b. Style of safety equipment
 - c. Condition at inspection, including any notes of wear and recommended maintenance
 - d. Date of inspection
- Verifying that any maintenance and quarterly inspections of the safety equipment is documented and up to date.
- Auditing all other attraction documentation and verifying all the following are valid and up to date:
 - a. All personnel of the attraction must have a current and valid certification on file. Any personnel that do not have a valid certificate must attend a training and be certified by a RCI certified Operator Trainer prior to operating.
 - b. Daily inspection checklists for each operational day must be completed and filed
 - c. Emergency Action Plans and Emergency Action Plan training logs
 - d. Routine emergency take down practice logs
 - e. Any Safety Reports must be submitted to RCI and on file at the location

* Note: Sites with additional attractions should consult the other volumes of the manual to find the inspection criteria for each of those components.

ANNUAL INSPECTION AND RECERTIFICATION *CONTINUED*

During the annual inspection, the RCI certified Inspector will document all of the specifics listed above, as well as all attraction layout specifics, and take all necessary inspection pictures to log the inspection. All inspection documentation will be kept on file for each year the annual inspection is completed. The RCI Inspector can make recommendations based on the results of the inspection. RCI reserves the right to withhold the certification until proof of repairs/recommendations are submitted and approved. If all requirements are met and the attraction is deemed compliant after inspection, RCI will issue a new certification valid for one year.



WARNING

An annual inspection and recertification is critical to ensure continued safe operation of any RCI attraction. RCI reserves the right to refuse the sale of replacement parts to non-compliant locations and alert local authorities if necessary.

4.4 SAFETY EQUIPMENT INSPECTION

Operators must properly inspect all safety equipment prior to use. Failure to inspect the safety equipment before use could result in serious injury or death.

All safety equipment components should be tracked, using the unique designated serial number, along with the condition on an equipment inventory log. An example of an equipment log can be downloaded from the Client Portal on RCI's website. Sites can create their own equipment inventory logs. Refer to section 2.5.8 for details. Equipment logs should be updated each time that a piece of safety equipment is pulled out of service, sent in for repair, has undergone maintenance, or failed.

4.4.1 HARNESS INSPECTION

All harnesses must be inspected thoroughly prior to use by a certified Operator. Failure to inspect harnesses prior to use may result in serious injury or death. RCI offers several different styles of harnesses to accommodate different Sky Trail® models. Follow the appropriate inspection criteria below based on the type of harness being inspected. Refer to section 4.4.1.1 for the inspection criteria of the Trail Plus harness and section 4.4.1.2 for the inspection criteria of the Trail harness. service, sent in for repair, has undergone maintenance, or failed.

4.4.1.1 TRAIL PLUS HARNESS

Refer to the following sections on how to inspect the Trail Plus harness. The inspection categories are broken down into webbing inspection, hardware inspection, and traceability.



4.4.1.1.1 WEBBING INSPECTION

4.4.1.1.1.1 WEBBING STRUCTURE



The webbing structure must be free from the following defects:

- No cuts, abrasions, or broken strands. It is acceptable for individual fibers to be abraded however when the abrasion or cut causes a strand to be severed, the harness must be removed from service.
- No excessive fuzziness. Retire when 50% of picks in the same row cannot be visually identified as individual picks.
- No protruding loops of webbing larger than $\frac{1}{2}$ ". Harness must be removed from service and retired if the loop exceeds $\frac{1}{2}$ ".
- No chemical exposure or discoloration.
- No glazing after the date of manufacture.

Example of damaged webbing structure

4.4.1.1.1.2 WEBBING STITCHING

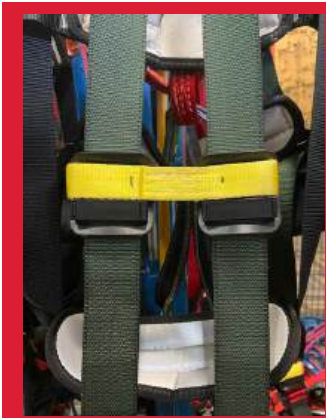


The webbing stitching must be free from the following defects:

- No broken, pulled or cut thread. A small piece of stitching sticking out at the end of a stitch is acceptable.
- Webbing cannot be pulled apart at stitching.

Example of damaged stitching

4.4.1.1.2 HARDWARE INSPECTION



The hardware on the harness refers to all buckles and clips. The buckles and clips must be free from the following defects:

- No deformations, cracks or corrosion.
- No rust with pitting in the surface of the metal.
- No sharp edges, cuts or nicks.
- No improperly functioning, missing or loose parts.
- No chemical exposure.

The harness keepers (plastic pieces for the yellow bar) must be in place and intact with no cracks or splits (as shown in the picture)

4.4.1.1.1.3 TRACEABILITY



The product label on the harness must be intact with legible information. Every harness will have a unique serial number listed on the product label. This serial number is used to track, identify, and record the specific harness across its life span. If the harness is missing the product label or the information on the product label can not be read, the harness must be removed from service and retired.

4.4.1.2 TRAIL HARNESS



Refer to the following sections on how to inspect the Trail harness. The inspection categories are broken down into webbing inspection, hardware inspection, and traceability.

4.4.1.2.1 WEBBING INSPECTION

4.4.1.2.1.1 WEBBING STRUCTURE

The webbing structure and netting must be free from the following defects:



- No cuts, abrasions, or broken strands. It is acceptable for individual fibers to be abraded however when the abrasion or cut causes a strand to be severed, the harness must be removed from service.
- No excessive fuzziness. Retire when 50% of picks in the same row cannot be visually identified as individual picks.
- No protruding loops of webbing larger than 1/2". Harness must be removed from service and retired if the loop exceeds 1/2".
- No chemical exposure or discoloration.
- No glazing after the date of manufacture.

Example of chemical exposure on the webbing

4.4.1.2.1.2 WEBBING STITCHING



The webbing stitching must be free from the following defects:

- No broken, pulled or cut thread. A small piece of stitching sticking out at the end of a stitch is acceptable.
- Webbing cannot be pulled apart at stitching.

Example of damaged stitching

4.4.1.2.2 HARDWARE INSPECTION

The hardware on the harness refers to all buckles, clips, D rings, and attachment rings. All hardware must be free from the following defects:

- No deformations, cracks or corrosion.
- No rust with pitting in the surface of the metal.
- No sharp edges, cuts or nicks.
- No improperly functioning, missing or loose parts.
- No chemical exposure.

*Note: during the inspection, the Operator must ensure that all buckles function and latch properly.

4.4.1.2.1.3 TRACEABILITY

The product label on the harness must be intact with legible information. Every harness will have a unique serial number listed on the product label. This serial number is used to track, identify, and record the specific harness across its life span.

4.4.2 SLINGLINE INSPECTION

All slinglines must be inspected thoroughly prior to use by a certified Operator. Failure to inspect slinglines prior to use may result in serious injury or death. RCI offers two different styles of slinglines to accommodate different Sky Trail® models. Follow the appropriate inspection criteria below based on the type of slingline being inspected. Refer to section 4.4.2.1 for the inspection criteria of the SRS style and section 4.4.2.2 for the inspection criteria of the Single Adjustable style.

4.4.2.1 SINGLE REDUNDANT SLINGLINE (SRS)

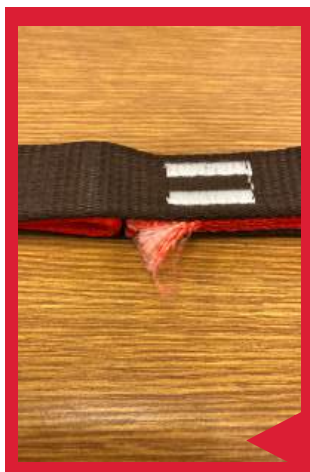


Refer to the following sections on how to inspect the SRS style. The inspection categories are broken down into webbing inspection, hardware inspection, and traceability.

4.4.2.1.1 WEBBING INSPECTION

4.4.2.1.1.1 WEBBING STRUCTURE

The webbing structure shall be free from the following defects.



Example of damaged webbing

- No cuts, abrasions, or broken strands. It is acceptable for individual fibers to be abraded however when the abrasion or cut causes a strand to be severed, the slingline must be removed from service.
 - Where the trolley connects to the slingline, this piece of webbing can have wear on the inner loop until it wears through to the outer loop of webbing. Once the inner loop of webbing wears through and reaches the outer loop, the slingline must be removed from service. This criteria does not apply to any other location on the slingline.
- No excessive fuzziness. Retire when 50% of picks in the same row cannot be visually identified as individual picks.
- No protruding loops of webbing larger than 1/2". The slingline must be removed from service and retired if the loop exceeds 1/2".
- No chemical exposure or discoloration.
- No changes in thickness.
- No glazing after the date of manufacture.

4.4.2.1.1.2 WEBBING STITCHING

The hardware on the SRS refers to the two locking aluminum carabiners. If the carabiners are left on the slingline and are not pre-loaded onto the harnesses, refer to section 4.4.4 for inspection criteria for carabiners.

4.4.2.1.2 HARDWARE INSPECTION

The Single Adjustable slingline will come with a sewn on product label containing the manufacturer information. The unique serial number for the slingline can be found on the trolley. Depending on the style of the trolley, the serial number will either be etched on the underside of the black puck, or imprinted on the top of the two hole washers. The serial number is used to track, identify, and record the specific slingline across its life span. If the slingline is missing the serial number or the information is not legible, the slingline must be removed from service and retired.

4.4.2.1.3 TRACEABILITY

The SRS will come with a sewn on product label containing the manufacturer information. The unique serial number for the slingline can be found on the trolley. Depending on the style of the trolley, the serial number will either be etched on the underside of the black puck, or imprinted on the top of the two hole washers. The serial number is used to track, identify, and record the specific slingline across its life span. If the slingline is missing the serial number or the information is not legible, the slingline must be removed from service and retired.

4.4.2.2 SINGLE ADJUSTABLE SLINGLINE



Refer to the following sections on how to inspect the Single Adjustable Slingline. The inspection categories are broken down into webbing inspection, hardware inspection, and traceability.

4.4.2.2.1 WEBBING INSPECTION

4.4.2.2.1.1 WEBBING STRUCTURE



The webbing structure shall be free from the following defects.

- No cuts, abrasions, or broken strands. It is acceptable for individual fibers to be abraded however when the abrasion or cut causes a strand to be severed, the slingline must be removed from service.
- No excessive fuzziness. Retire when 50% of picks in the same row cannot be visually identified as individual picks.
- No protruding loops of webbing larger than 1/2". The slingline must be removed from service and retired if the loop exceeds 1/2".
- No curvature archs over 4" in depth.
- No chemical exposure or discoloration.
- No changes in thickness.
- No glazing after the date of manufacture.

Example of individual picks not being identifiable

4.4.2.2.1.2 WEBBING STITCHING

The webbing stitching shall be free from the following defects.

- No broken, pulled or cut thread. A small piece of stitching sticking out at the end of a stitch is acceptable.
- Webbing cannot be pulled apart at stitching.

4.4.2.2.2 TRACEABILITY

The Single Adjustable slingline will come with a sewn on product label containing the manufacturer information. The unique serial number for the slingline can be found on the trolley. Depending on the style of the trolley, the serial number will either be etched on the underside of the black puck, or imprinted on the top of the two hole washers. The serial number is used to track, identify, and record the specific slingline across its life span. If the slingline is missing the serial number or the information is not legible, the slingline must be removed from service and retired.

4.4.3 TROLLEY INSPECTION

All trolleys must be inspected thoroughly prior to use by a certified Operator. Failure to inspect the trolleys prior to use may result in serious injury or death. RCI offers three different styles of trolleys to accommodate different Sky Trail® models. Follow the appropriate inspection criteria below based on the type of trolley being inspected. Refer to section 4.4.3.1 for the inspection criteria of the RSA2 style, section 4.4.3.2 for the inspection criteria of the TSA style, and section 4.4.3.3 for the inspection criteria of the SRTSA style.

4.4.3.1 REDUNDANT SLIDER ASSEMBLY (RSA2) INSPECTION



Refer to the following section for the detailed inspection criteria for the RSA2 style trolley.

4.4.3.1.1 BALL SHANKS

- The ball shank should not have any cracks or rust with severe pitting on the surface of the metal.
- Examine the ground edge of the ball shanks; the wire should be flush with the ball and should not have slipped into the ball.
- Exposure of any wires through the ball shank is cause for the immediate retirement of the RSA2.

4.4.3.1.2 TWO HOLE WASHERS



- Examine the holes of the washers and make sure the washer cannot come off of the ball shanks.
- Look for any cracks or rust with severe pitting that penetrates the surface of the metal.
- If the serial number is imprinted on the two hole washer, inspect the engraving on top of the washer and ensure that the serial number is still visible. The RSA2 must be removed from service and retired if the serial number is not legible.

4.4.3.1.3 BLACK PUCK

The black puck cannot have any gouging, cracking, or excessive wear. If the serial number is engraved on the underside of the black puck, inspect to ensure that the serial number is still visible. The RSA2 must be removed from service and retired if the serial number is not legible.



- If the black puck has circular wear indicators on the underneath, inspect to make sure it is still visible. If the wear mark is worn off, the RSA2 must be removed from service and retired.

*Note: any excessive wear to the underside of the black puck can mean incorrect loading into the overhead track. Confirm all Operators are correctly loading the split puck into the overhead track.

4.4.3.1.4 SPLIT PUCK



- The split puck width must measure greater than 3/16" (4.5mm) thick. Split puck should be replaced if it measures under 3/16" thick.
- No gouging, cracking, or excessive wear.

Example of worn split puck in need of replacement

4.4.3.1.5 CABLE SLEEVE (WIRE ROPE GUARD)



The cable sleeve must be replaced when it is cracked, damaged, or worn through to the point of exposing the wire rope.

Example of damaged cable sleeve in need of replacement

4.4.3.1.6 COLLAR PROTECTOR

If the collar protector is missing, the RSA2 is still acceptable for use, however, wear on the trolley may be accelerated.

4.4.3.1.7 COLLAR

- Ensure both hex screws are present and tight.
- There should be no visible cracking or gaps in the collar.

4.4.3.1.8 SWAGE SLEEVES

- Inspect by looking down into the sleeves. The wires should be near the top rim of the swage sleeve. Wires must be visible and the swage sleeve cannot be moved.
- Inspect for exposed wire rope that extends past the rim of the swage sleeve. This may mean the swage sleeve has worn down or has moved.
- Look for any cracks or rust with severe pitting below the surface. These are all causes for retirement of the RSA2.

4.4.3.1.9 TWO EYE THIMBLE



- There should be no visible cracks.
- Inspect the inside of the thimble where the slingline is attached to be sure the thimble is not worn through to the wire rope.

Example of a damaged two eye thimble

4.4.3.1.10 WIRE ROPE ASSEMBLIES

- Inspect any exposed portion of each set of wire ropes for rust with severe pitting which can penetrate the surface of the wire.
- Inspect any exposed wire rope assembly for broken wires.
- The two-in-two rule is to be used when inspecting the wire rope. For each wire rope assembly:
 - Within any 2" span of wire rope on a trolley, two wires are allowed to be broken. If there are more than two wire breaks within a 2" span, the trolley must be removed from service and retired.
- The full length of the wire rope assemblies must be inspected during a quarterly inspection. Follow the instructions in section 5.1.1.2.1 for instructions on how to access the wire rope assemblies.

4.4.3.2 TROLLEY SLIDER ASSEMBLY (TSA) INSPECTION



Refer to the following section for the detailed inspection criteria for the TSA style trolley.

4.4.3.2.1 BALL SHANKS

- The ball shank should not have any cracks or rust with severe pitting on the surface of the metal.
- Examine the ground edge of the ball shanks; the wire should be flush with the ball and should not have slipped into the ball.
- Exposure of any wires through the ball shank is cause for the immediate retirement of the TSA.

4.4.3.2.2 TWO HOLE WASHERS



- Examine the holes of the washers and make sure the washer cannot come off of the ball shanks.
- Look for any cracks or rust with severe pitting that penetrates the surface of the metal.
- If the serial number is imprinted on the two hole washer, inspect the engraving on top of the washer and ensure that the serial number is still visible. The TSA must be removed from service and retired if the serial number is not legible.

4.4.3.2.3 BLACK PUCK



- The black puck cannot have any gouging, cracking, or excessive wear.
- If the serial number is engraved on the underside of the black puck, inspect to ensure that the serial number is still visible. The TSA must be removed from service and retired if the serial number is not legible.
- If the black puck has circular wear indicators on the underneath, inspect to make sure it is still visible. If the wear mark is worn off, the TSA must be removed from service and retired.

*Note: any excessive wear to the underside of the black puck can mean incorrect loading into the overhead track. Confirm all Operators are correctly loading the split puck into the overhead track.

4.4.3.2.4 SPLIT PUCK



- The split puck width must measure greater than 3/16" (4.5mm) thick. Split puck should be replaced if it measures under 3/16" thick.
- No gouging, cracking, or excessive wear.

Example of worn split puck in need of replacement

4.4.3.2.5 CABLE SLEEVE



The cable sleeve must be replaced when it is cracked, damaged, or worn through to the point of exposing the wire rope.

Example of damaged cable sleeve in need of replacement

4.4.3.2.6 COLLAR PROTECTOR

If the collar protector is missing, the TSA is still acceptable for use, however, wear on the trolley may be accelerated.

4.4.3.2.7 UPPER HOUSING

- Inspect the upper housing for any signs of wear, gouging, or cracking. A trolley that has gouges greater than 1/16th of an inch or wear that exposes any wire must be removed from service.
- Make sure both screws are present and tight and that there is no gap in the housing.

4.4.3.2.8 BARREL NUT AND SCREW

Make sure the barrel nut and screw are present and tight.

4.4.3.2.9 LOWER HOUSING

Inspect the lower housing for any signs of wear, gouging, or cracking. A trolley that has gouges greater than 1/16th of an inch or wear that exposes any wire must be removed from service.

4.4.3.2.10 WIRE ROPE ASSEMBLIES

- Inspect any exposed portion of each set of wire ropes for rust with severe pitting which can penetrate the surface of the wire.
- Inspect any exposed wire rope assembly for broken wires.
- The two-in-two rule is to be used when inspecting the wire rope. For each wire rope assembly:
 - Within any 2" span of wire rope on a trolley, two wires are allowed to be broken. If there are more than two wire breaks within a 2" span, the trolley must be removed from service and retired.
- The full length of the wire rope assemblies must be inspected during a quarterly inspection. Follow the instructions in section 5.1.1.2.2 for instructions on how to access the wire rope assemblies.

4.4.3.3 SKY RAIL® TROLLEY SLIDER ASSEMBLY (SRTSA) INSPECTION



Refer to the following section for the detailed inspection criteria for the RSA2 style trolley.

4.4.3.3.1 BALL SHANKS

- The ball shank should not have any cracks or rust with severe pitting on the surface of the metal.
- Examine the ground edge of the ball shanks; the wire should be flush with the ball and should not have slipped into the ball.
- Exposure of any wires through the ball shank is cause for the immediate retirement of the SRTSA.

4.4.3.3.2 TWO HOLE WASHERS



- Examine the holes of the washers and make sure the washer cannot come off of the ball shanks.
- Look for any cracks or rust with severe pitting that penetrates the surface of the metal.
- If the serial number is imprinted on the two hole washer, inspect the engraving on top of the washer and ensure that the serial number is still visible. The SRTSA must be removed from service and retired if the serial number is not legible.

4.4.3.3.3 BLACK PUCK



- The black puck cannot have any gouging, cracking, or excessive wear.
- If the serial number is engraved on the underside of the black puck, inspect to ensure that the serial number is still visible. The TSA must be removed from service and retired if the serial number is not legible.
- If the black puck has circular wear indicators on the underneath, inspect to make sure it is still visible. If the wear mark is worn off, the SRTSA must be removed from service and retired.

*Note: any excessive wear to the underside of the black puck can mean incorrect loading into the overhead track. Confirm all Operators are correctly loading the split puck into the overhead track.

4.4.3.3.4 SPLIT PUCK



- The split puck width must measure greater than 3/16" (4.5mm) thick. Split puck should be replaced if it measures under 3/16" thick.
- No gouging, cracking, or excessive wear.

Example of worn split puck in need of replacement

4.4.3.3.5 CABLE SLEEVE



- The cable sleeve must be replaced when it is cracked, damaged, or worn through to the point of exposing the wire rope.

Example of damaged cable sleeve in need of replacement

4.4.4.3.6 COLLAR PROTECTOR

If the collar protector is missing, the SRTSA is still acceptable for use, however, wear on the trolley may be accelerated.

4.4.3.3.7 UPPER HOUSING



- Inspect the upper housing for any signs of wear, gouging, or cracking. A trolley that has gouges greater than 1/16th of an inch or wear that exposes any wire must be removed from service.
- Make sure both screws are present and tight and that there is no gap in the housing.

Example of missing screw in upper housing

4.4.3.3.8 NYLON LOCK NUT

- Confirm that the nylon lock nut retaining the sheaves is present and engaged (torqued to 12 ft-lbs).
- Nylon lock nuts are one time use only.

4.4.3.3.9 AXLE BOLT

Verify that the axle bolt is present, tight, and is not bent.

4.4.3.3.10 SHEAVES

- Inspect to ensure that the sheaves spin freely and do not click or grind.
- Ensure the sheaves are securely attached to the trolley and do not wobble.
- Sheaves should show no signs of excessive wear, gouging, or cracking.

4.4.3.3.11 LOWER HOUSING

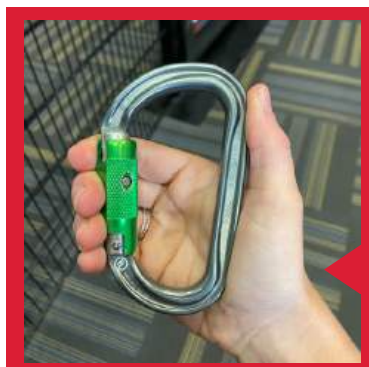
Inspect the lower housing for any signs of wear, gouging, or cracking. A trolley that has gouges greater than 1/16th of an inch or wear that exposes any wire must be removed from service.

4.4.3.3.12 WIRE ROPE ASSEMBLIES

- Inspect any exposed portion of each set of wire ropes for rust with severe pitting which can penetrate the surface of the wire.
- Inspect any exposed wire rope assembly for broken wires.
- The two-in-two rule is to be used when inspecting the wire rope. For each wire rope assembly:
 - Within any 2" span of wire rope on a trolley, two wires are allowed to be broken. If there are more than two wire breaks within a 2" span, the trolley must be removed from service and retired.
- The full length of the wire rope assemblies must be inspected during a quarterly inspection. Follow the instructions in section 5.1.1.2.3 for instructions on how to access the wire rope assemblies.

4.4.4 CARABINER INSPECTION

All carabiners must be inspected by a certified Operator thoroughly prior to each use. Failure to inspect carabiners prior to use may result in serious injury or death. If any carabiners do not pass inspection, remove from service immediately and contact RCI to order a replacement. All carabiners used on the Sky Trail® attraction must be purchased through RCI.



Follow the inspection criteria listed below for inspecting carabiners:

- When opening, the gate should rotate easily and completely and should close and lock automatically when released.
- Perform a squeeze test by squeezing down on the carabiner gate while it is in the locked position. The gate should not be able to be opened while performing this squeeze test.

Performing a squeeze test on a locking carabiner



- If the carabiner requires a finger key, ensure that it cannot be opened without the finger key.
- No cracking, gouging, deformation, or burrs.
- There must be no corrosion or rust with pitting in the surface of the metal.
- There must be no excessive wear on the metal greater than 10% of the original diameter.

Example of a carabiner that does not automatically close when released

4.4.5 EMERGENCY TAKE DOWN KIT INSPECTION



All Emergency Take Down Kits (ETK) must be inspected thoroughly and repacked by a certified Operator prior to each operational day. Failure to inspect all components prior to use may result in serious injury or death. Every ETK must contain a rescue rope, a guide rope, three aluminum carabiners, one steel carabiner, one RSA2, one steel rescue figure 8, one aluminum figure 8, safety scissors and a bag to contain it all. If any components do not pass inspection, remove from service immediately and contact RCI to order a replacement. All ETK components must be purchased through RCI.

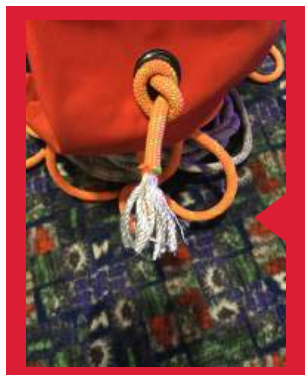
Not shown in picture is aluminum figure 8 and one Cypher HMSawtooth Anodized Twistlock aluminum carabiner

4.4.5.1 BAG



- The bag itself must be inspected for any wear such as rips and tears.
- The bag handles must be in good condition with no signs of wear.
- UV damage may occur if the attraction is located outdoors and may accelerate the wear.

4.4.5.2 ROPES



- The ropes should be inspected for cuts, abrasions, and any damage to the outer sheath of the rope.
- There should be no visual or physical changes in the diameter of the entire rope. Any diameter change is a sign that the core has been compromised.

Example of exposed core on rescue rope

There are two styles of rope eye terminations, metal (copper) ferrules and sewn eye terminations. Any ferrules made of aluminum must be removed from service and retired immediately.

Metal ferrules:

- No sharp edges or cracks
- Legible serial number on the ferrule on the retrieval rope

Sewn eye terminations:

- Must have protective sheath
- No cut thread
- No unraveling thread
- Cannot be pulled apart at the stitching

4.4.5.3 CARABINERS

The ETK must contain three aluminum carabiners, two Cypher HMS Sawtooth Anodized Twistlock Carabiners and either the Omega Jake TL Pewter/Seafoam Green carabiner or the Petzl Am'D Triact-Lock carabiner (the Petzl Am'D Triact-Lock carabiner replaced the Omega Jake TL carabiner in 2020). The ETK also contains one steel carabiner. Refer to section 4.4.4 for the inspection criteria for carabiners.



Cypher HMS Sawtooth Anodized Twistlock carabiner



Omega Jake TL Pewter/Seafoam Green carabiner



Petzl Am'D Triact-Lock carabiner, must be used with a CAPTIV positioning bar. (This carabiner replaced the Omega Jake TL carabiner in 2020)



CAPTIV positioning bar. Must be installed on the Petzl Am'D Triact-Lock carabiner.



Steel Carabiner

4.4.5.4 SAFETY SCISSORS



Inspect the safety scissors to make sure they function properly and are not broken or missing any parts.

4.4.5.5 TROLLEY

Refer to section 4.4.3.1 for the inspection criteria for the RSA2 trolley.

4.4.5.6 STEEL FIGURE 8



Inspect the entire steel figure 8 for the following:

- No deformations, sharp edges, grooves, or cracks
- No or corrosion or rust with pitting in the surface of the metal.
- No chemical exposure.

4.4.5.7 ALUMINUM FIGURE 8



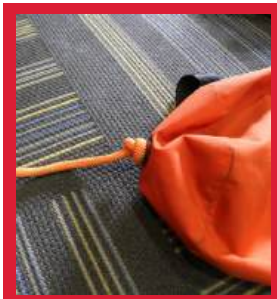
Inspect the aluminum figure 8 for the following:

- No deformations, sharp edges, grooves, or cracks
- No or corrosion or rust with pitting in the surface of the metal.
- No chemical exposure.

4.4.5.8 HOW TO PACK THE ETK

All Emergency Take Down Kits (ETK) must be inspected thoroughly and repacked by a certified Operator prior to each operational day. Failure to inspect all components prior to use may result in serious injury or death. Inspecting and packing the ETK can occur simultaneously. Refer to the ETK inspection criteria in section 4.4.5. For an instructional video on how to pack the ETK, access the Client Portal or navigate any browser to, ropescourses.force.com/ClientPortal/s/article/How-to-Pack-an-Emergency-Take-Down-Kit Please note the instructional video does not replace a physical training held by an RCI certified Operator Trainer.

After all components of the ETK have been disassembled, to pack the ETK, a certified Operator should follow the steps listed below.



Step 1

- Tie a knot in the orange rescue rope about 12" from the end of the rope.
- Thread the knot end of the rope through the bottom hole of the bag. Then, tie off a second knot to secure the bag.



Step 2

- Place one arm through one handle of the bag. With the same hand, grab the rescue rope. This will be your inspection hand.
- With the other hand (your free hand), pull the rope downward into the bag. As the rope slides through the inspection hand, inspect the rope according to the guidelines listed in section 4.4.5.2. Feed the entire length of the rescue rope into the bag. Never coil the rope inside the bag.

HOW TO PACK THE ETK *CONTINUED*



Step 3

Once you reach the end of the rescue rope, inspect the metal ferrule or stitching for any damage according to the guidelines listed in section 4.4.5.2. Then, temporarily place the end of the rope into the side pocket of the bag. If the location is using the new Petzl Am'D carabiner, it will remain on the rescue rope, as pictured here. Ensure the CAPTIV positioning bar is installed.



Step 4

Feed the guide rope into the bag in the same manner as listed in step 3. Always put the guide rope in after the orange rope. Never coil the rope inside the bag, simply stack the guide rope on top of the rescue rope. Leave the loop end out of the bag and inspect the metal ferrule or stitching according to the guidelines listed in section 4.4.5.2.



Step 5

Connect the rescue & guide ropes with the aluminum Cypher HMS carabiner. Refer to section 4.4.5.3 for inspection criteria for carabiners.



Step 6

- If the ETK contains the aluminum Omega Jake carabiner, connect to the rescue rope only. If using the Petzl Am'D carabiner, it will already be connected to the rescue rope.
- Attach the safety scissors to the Omega Jake or the Petzl Am'D carabiner (as pictured here). Never connect the two aluminum carabiners together. Refer to section 4.4.5.3 for inspection criteria for carabiners and section 4.4.5.4 for inspection criteria on the safety scissors.

HOW TO PACK THE ETK *CONTINUED*



Step 7

Put the remaining rope, carabiners and scissors carefully into the bag. Leave a loop of the rescue rope out of the bag.



Step 8

- Loop the steel carabiner through the RSA and make sure that the carabiner has the larger end facing down. Refer to section 4.4.5.3 for inspection criteria for carabiners.
- Then, attach the steel figure 8 to the steel carabiner. Refer to section 4.4.5.6 for inspection criteria for the steel figure 8.



Step 9

Connect the rescue rope and steel figure 8 by looping the rescue rope through the body of the steel figure 8 and up and around the trolley. Pull tight. Refer to section 4.4.3.1 for inspection criteria of the trolley.



Step 10

- Attach the steel carabiner to one handle of the bag. It is not necessary to attach to both bag handles. Make sure the bag handle is near the gate of the steel carabiner.
- Ensure all ropes are in the bag, and the steel figure 8 is exposed. Then, tighten the bag using the drawstring on the side.

Once inspected and properly packed, the Operator must return the ETK(s) to their designated locations on the attraction prior to opening.

*Note: If the site has multiple ETK's, repeat steps 1-10 for each kit.

4.5 STRUCTURAL INSPECTION

All components of the Sky Trail® attraction must be inspected by certified Operators prior to opening each day. The entire attraction must be cycled by an Operator, meaning that each element must be crossed and any additional features on the attraction must be inspected. This inspection must be documented on the Daily Inspection Checklist.

4.5.1 BOLTS AND NUTS



Most structural steel connections on a Sky Trail® use A325 bolts and the elements use A307 bolts. All bolts must have at least one full thread exposed beyond the accompanying nut. Only with RCI Engineering approval and signature, may this standard be altered. Bolts are to be tight and the Anco® nut locking pin, if present, is to be engaged in at least one complete thread of the bolt. Direct tension indicator (DTI) washers are used throughout the entire course. DTI's must be properly crushed at all locations.

4.5.1.1 LOOSE BOLTS

When 1/3 or less of the bolts in a single connection are found to be loose, repair can be completed by simply tightening. When more than 1/3 of the bolts in a single connection are found to be loose, repair can only be completed by replacing all of the bolts in the connection with new bolts and nuts. Replace each bolt individually before moving on to the next bolt. Do not remove all bolts at once. If this occurs, contact the RCI Client Success Department immediately. RCI may request that proof of repair be submitted.

4.5.1.2 EXPOSED THREADS



In order to prevent injury there must not be any locations where participants can come into contact with exposed bolt threads.

Exposed threads may be mitigated by:

- Installation of a cap nut.
- Reversal of the bolt (must be replaced with a new bolt and nut).

*Note: Contact the RCI Client Success Department prior to reversing any bolts on the attraction. RCI will need to grant permission and may require that proof of the modification be submitted.

4.5.2 BASE CONNECTIONS AND FOOTINGS



A base plate is a flat supporting plate or frame at the base of a column, designed to distribute the column's weight over a greater area and provide increased stability. Base plates should be inspected for the following:

- All base plate connections should be flush and tight.
- The anchor bolt does not spin when the nut is tightened.
- No cracks on the base plates or in the foundation around the base plate.
- No cracks, rust, corrosion, or damage to any of the base plate welds.
- No damage to the paint.
- No gaps between the base plate and the ground that exceed 1/4". Grout is needed if gaps between the base plate and ground exceed 1/4". RCI requires the use of a 5000 psi non-shrink grout for this repair.



A footing is part of a structure that is in direct contact with soil and transmits load into it. Not all Sky Trails® will have footings. If footings are present, they must be inspected for the following:

- There are to be no cracks in the foundation around the footings.
- No cracking on the footing stemming from underneath the base plate.
- All base plate connections to footers must be present and tight. Loose nuts found at base connections to footers may be tightened as long as the following remains true:
 - No crevasses are found in the concrete.
 - The anchor bolt does not spin when the nut is tightened.
- No gaps between the base plate and the footer that exceed 1/4". Grout is needed if gaps between the base plate and concrete exceed 1/4". RCI requires the use of a 5000 psi non-shrink grout for this repair.

4.5.3 STEEL SPLICES



Steel splice plates are found where sections of the Sky Trail® come together. Steel splice plates must be inspected for the following:

- Steel splices must be flush and tight. There must be no gaps between steel plates.
- All bolts and nuts are present and secure. The Anco® nut locking pin must be present and engaged in at least one complete thread of the bolt.
- No rust or corrosion, or any damage to the paint.

4.5.4 WELDS



Almost all welds on the Sky Trail® are fused perpendicular intersecting plates of steel. Inspect all welds for the following:

- Verify that all welds look similar to one another.
- Any broken, cracked, or flaking rust welds are causes to immediately close the Sky Trail® until an RCI Engineer has had an opportunity to review and provide a repair procedure. RCI may require that a NDT inspection be performed. After the repair procedure has been provided to the location, RCI will require proof to be documented and submitted before granting permission to open the Sky Trail®. Once the repair procedure has been completed and approved the Sky Trail® can be reopened.
- All welds should be coated in the approved course paint. Welds should always be the first priority when repairing paint over the Sky Trail's® service life.

*Note: Contact the RCI Client Success Department for any questions or concerns about welds on the attraction.

4.5.5 OVERHEAD TRACK



The overhead track must always allow the trolley to pass through uninhibited. Make sure the track aligns properly at all connections.

Except at intersections, no track section should be wider than $\frac{7}{8}$ ". At intersections, a 1- $\frac{1}{4}$ " dowel must not be allowed into the intersection. The track should be free of debris. Sticks, bird and insect nests, and dirt are some things to look for in outdoor attractions.

The constant overhead tracking system must never have an exit point unless specifically designed and approved by the RCI Engineering Department.



All track blocks must be bolted in place and snug tight. If an exit is designed into a Sky Trail® or Sky Trail® component, it must be blocked and locked while unattended. If an exit point is identified that is not part of the Sky Trail® design, the Sky Trail® must not be operated. Contact RCI immediately for instructions.

4.5.6 SKY TRAIL® ENTRANCE

The Sky Trail® entrance must be inspected prior to each operational day. Ensure that the Sky Trail® is capable of being securely locked when closed. If equipped with netting, it must be securely attached and free of any damage. Ensure all necessary information signs and stickers are present and legible.

4.5.7 INCLINES



All inclines on the attraction must be inspected prior to opening. All inclines must be equipped with either incline catches or a zig zag overhead track. Both systems are used to help reduce the risk of injury if a fall on the stairs occurs. Inclines must be inspected for the following:

- The base plate of the entrance incline should be flush with the ground and all bolts should be tight.
- Ensure plumber steps have no loose or cracked boards.
- Handrails (if applicable) should be free of sharp spots, chipped paint, or rust.
- All steps must be free of any debris.
- Refer to section 4.5.1 for inspection criteria for bolts.
- Refer to section 4.5.4 for inspection criteria for welds
- Refer to section 4.5.9.10.5 for inspection criteria of plumber.
- If the inclines have padded components, refer to section 4.5.8.
- If equipped with incline catches, pulling the handle should allow the catch to open and the catch should lock behind you once you have passed through. Refer to section 4.5.9.10.3 for inspection criteria of combi rope.

4.5.8 PADDING



RCI may have included padding with the Sky Trail® or may have required that padding be added by the Owner. If padding is required, it must be present for the Sky Trail® to operate.

- The padding should have no excessive wear such as rips, holes, or damage that may cause harm to a participant.
- Inspect the padding to ensure that it is securely attached to the Sky Trail®.

*Note: If padding is in need of repair, contact the RCI Client Success Department for further instructions.

4.5.9 PLATFORMS

- All platforms must be inspected prior to opening. Ensure the plate of the column is flush with the platform. There should be no space between the two and all connections should be tight. There should be no debris or tripping hazards. Paint should be in good condition with no pitting rust.

4.5.10 ELEMENTS

During the daily pre-use inspection, an Operator must inspect all elements on the attraction. The entire attraction must be cycled by an Operator, meaning that each element must be crossed. There should be no objects within three feet of an element, measuring from the middle of the overhead track. Any objects within that safety envelope of three feet must be removed or padded. Courses located in marine or chlorinated environment must be routinely rinsed with fresh water.

4.5.10.1 ROPE ELEMENTS

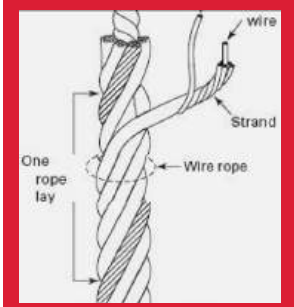
Use the following criteria when inspecting rope elements on the attraction.

4.5.10.1.1 COMBI-ROPE



Combi-rope is a synthetic fiber covered wire rope used on the rope elements. Combi-rope is composed of 6 strands of steel wire cable with a polyethylene exterior coating.

It is acceptable if the outer polyethylene layer of the combi-rope is worn down, as long as the wires in the cable are not broken beyond the allowed amount.



Follow this criteria to determine if the element needs to be retired as a result of broken wires in the cable:

- 1 - 3 - 7 Rule of Tolerance
 - There is only 1 wire break in 1 strand of rope within 1 lay*.
 - There are only 3 wire breaks in 1 lay of rope.
 - There are only 7 wire breaks in 1 continuous length of element.

*Note: A rope lay is the length/distance of an outer strand to travel around the full circumference of the rope.

If an element does not pass inspection due to broken wires, the element should be immediately closed off to participant access. Contact the RCI Client Success Department to order a replacement element.

If an element has a broken wire, but still passes the 1-3-7 Rule of Tolerance above, the spot can be covered with Rescue Tape®. Rescue Tape® is a self fusing silicone tape that is safe to use on the rope elements. The element in question should be monitored daily for any changes or progression in wear to ensure participant safety. Refer to section 5.2.1.1 for further details on how to use Rescue Tape®.

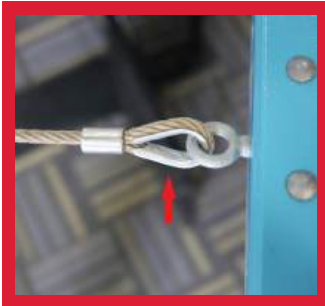
*Note: if the element passes the 1-3-7 Rule of Tolerance but the exposed broken wire(s) are within reach of any participant, RCI recommends closing off the element and contacting the RCI Client Success Department to order a replacement. Any exposed broken wires may cause harm to a participant.

4.5.10.1.2 EYEBOLT CONNECTIONS AND STEEL THIMBLES



Eyebolts are used to connect elements to the platforms.

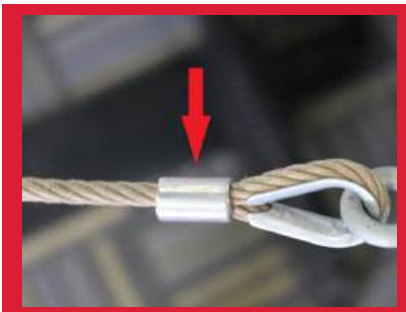
- Ensure all eyebolts are flush and tight.
- Ensure eyebolts have no cracks or excessive wear.
- Ensure eyebolts are free of rust and pitting.
- Replacement of an eyebolt must occur for wearing exceeding 10% of the eyebolts' original diameter.
- exceeding 10% of the eyebolts' original diameter.



Thimbles are metal grooved rings inserted into a loop of rope to prevent wear.

- Ensure thimbles have no cracks or excessive wear.
- Ensure thimbles are free of rust and pitting.
- Ensure thimbles are free of any sharp spots.

4.5.10.1.3 ALUMINUM FERRULE AND FERRULE T'S



A ferrule is a metal ring or cap placed around the combi-rope for reinforcement or to compress pieces of rope together.

- No cracking.
- All surfaces should be smooth. If the surface is sharp, it can be filed down or covered with Rescue Tape.



Ferrule T's are found where two combi-rope lengths intersect and connect.

- Screws should be present and tight.
- No looseness as this may cause excessive wear to the combi-rope.
- No cracking.
- All surfaces should be smooth. If the surface is sharp, it can be filed down or covered with Rescue Tape.

4.5.10.1.4 PLASTIC POLY-FIXES



Poly-fixes are plastic fixings and can be found on some of the rope elements.

- All screws should be present and tight.
- All surfaces should be smooth. If the surface is sharp, it can be covered with Rescue® Tape.
- No looseness as this may cause excessive wear to the combi-rope.
- No cracking.

4.5.10.1.5 PLUMBER



Plumber is the plastic lumber located on the attraction elements and incline steps.

- All plumber should be inspected for cracks and splinters.
- All bolts should be present and tight.
- Inspect for any loose boards attached to inclines or walkways.

4.5.10.2 STEEL ELEMENTS

Use the following criteria when inspecting steel elements on the attraction.

4.5.10.2.1 CONNECTION PLATES

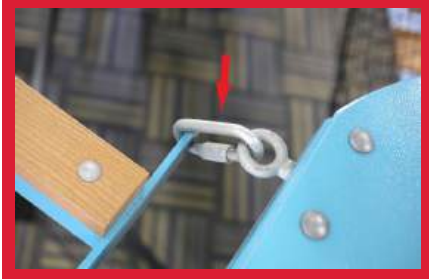
Steel element connection plates should always be flush and tight to the platforms.

- There should be no cracking or corrosion on the connection plate.
- Where fasteners are installed (quick links and eyebolts), there should be no excessive wear or change in the diameter of the hole on the connection plate. There must be at least 3/4" of steel between the edge of the hole and the top edge of the steel plate.
- Bolts must follow the requirements of all other bolts found in the structural inspection.

4.5.10.2.2 WELDS

Refer to section 4.5.4 for inspection criteria for welds.

4.5.10.2.3 QUICK LINKS



A quick link is a chain link that is commonly found on steel elements.

- Ensure that the gate is tightly closed and cannot be opened by hand.
-If the gate of a quick link is found to be loose, tighten with a wrench.
- Ensure that quick links are free of rust and pitting.
- Quick links must be replaced for wear exceeding 10% of their original diameter.

4.5.10.2.4 PLUMBER

Refer to section 4.5.9.1.5 for the inspection criteria of plumber.

4.5.10.2.5 PAINT

The steel on the elements should always be coated in the approved course paint, especially on any welds. Paint should be in good condition and not chipping or corroded. No pitting rust should be found. Refer to section 5.2.2.1 for instructions on how to make paint repairs.

4.5.11 SUN SHADES



Sun shades are optional additions on outdoor Sky Trails®.

If sun shades are present, all hardware should be tightly mounted and installed according to the manufacturer's recommendations and their attachments must be inspected daily. A variety of bolts, screws, welds, and other types of fasteners must be checked for looseness or any signs of failure. If a sun shade has become unattached at any place, any elements under the shade must be shut down until it can be repaired. Verify there are no rips or tears in the material.

*Note: Please refer to sun shade manufacturer information on inspecting, maintaining, and removing the product during harsh weather conditions.

5.0 MAINTENANCE

Sky Trail® maintenance activities include, but are not limited to maintaining safety equipment, cleaning safety equipment and the attraction, repairing any damaged paint, and tightening and replacing fasteners as needed. Environmental and operational factors heavily affect the wear and subsequent lifespan of Sky Trail® parts. The need to replace wearable parts or perform maintenance is often best determined by inspecting the structure on a regular basis. Unusual sounds and degraded performance are indicators that parts need to be replaced. Follow all operational instructions to avoid unnecessary damage to the Sky Trail® and the safety equipment. The Sky Trail® must be immediately shut down if any large-scale repairs are required. Contact RCI immediately for any repairs or modifications.

5.1 SAFETY EQUIPMENT SERVICING, CLEANING, RETIREMENT, AND REPLACEMENT

5.1.1 SERVICING SAFETY EQUIPMENT

5.1.1.1 - SERVICING SAFETY EQUIPMENT BY RCI

All safety equipment that does not pass inspection should be removed from service immediately. Safety equipment may be able to be repaired. It is a best practice to contact your RCI Account Manager to inquire about whether the safety equipment in question can be repaired. Depending on the type of repair, the client may need to send the pieces of safety equipment to RCI to be serviced.

In order to send safety equipment to RCI, the following steps should take place:

- Remove the failed safety equipment from service immediately.
- Tag the failed piece of safety equipment with a damaged equipment tag*. Be as detailed as possible.
- Store the tagged safety equipment in a secure separate location from the usable equipment in order to avoid inadvertent use.
- Contact the RCI Client Success Department. Be sure to provide detailed information and pictures of the failed equipment.
- If the safety equipment is deemed repairable, your RCI Account Manager will provide an RMA number.
- Follow the instructions provided by your RCI Account Manager to return the item to RCI Adventure Products. Be sure to include the designated RMA number provided.
- Once the safety equipment is received and inspected by RCI, an updated quote will be provided based on the applicable repairs. This quote must be approved by the client in order for the repairs to be completed.

*Note: Damaged equipment tags are available on the RCI Client Portal.

5.1.1.2 - SERVICING SAFETY EQUIPMENT BY CLIENT

Some replaceable components of the safety equipment can be serviced on-site to avoid sending equipment to RCI. These replaceable components may need to be serviced due to failing inspection or as part of routine maintenance as described in section 4.2. All replaceable parts must be purchased from RCI. It is recommended that all sites order a supply of these replaceable parts to avoid any unnecessary downtime due to pulled safety equipment. These replaceable components include the split puck, cable sleeve, and the SRTSA sheave assemblies. Follow the instructions below to service these components. Most other repairs will need to be sent in to RCI for servicing. Follow the instructions in section 5.1.1.1 to send equipment to RCI.

5.1.1.2.1 HOW TO DISASSEMBLE AN RSA2

Over time, RSA2's will become worn and require routine maintenance. Follow these steps to disassemble and reassemble the RSA2s properly. All replaceable parts must be purchased from RCI. The tools needed to complete this task are:

- Vice grips
- 5/32" allen wrench
- Medium strength threadlocker (blue loctite 248)

Step 1: Removing the split puck.



- To remove the split puck, place the vice grips straight on either side of the split.
- Apply opposing forces (upward and downward) to twist the split puck open enough to remove. Be careful not to apply too much pressure as it may deform the split puck and cause premature wear.
- Align the cable sleeve into the opening of the split puck and pull the assembly out.

*Note: If you are just replacing the split puck follow the steps listed above, as well as the last step in this section in order to install a new split puck.

Step 2: Removing the collar.



- Remove the collar by loosening the collar screws. The collar will come off in two pieces.
- Be careful not to lose the screws as they will be needed in order to reassemble the RSA2 in future steps.

HOW TO DISASSEMBLE AN RSA2 *CONTINUED*

Step 3: Removing the cable sleeve.

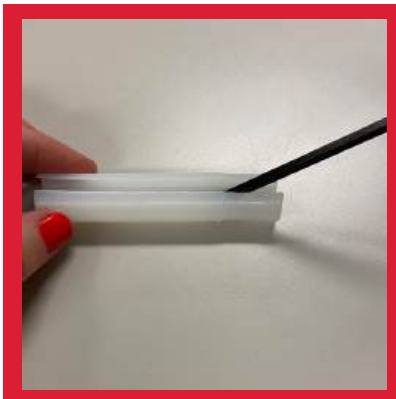


- To remove the cable sleeve, slide the collar protector down the wire cables. This will provide enough space to pull the cable sleeve down, releasing it entirely from underneath the black puck
- Once the cable sleeve is free from the underneath the black puck, pry the cable sleeve off by bending the wire cables until fully removed.

Step 4: Inspecting all inner components.

- While the wire cables are visible, inspect by bending to expose any wire breaks. There should be no more than two wire breaks per two inches of wire cable. Figure 59
- If the RSA2 does not pass inspection it should be removed from service, documented on the equipment

Step 5: Installing the cable sleeve.



- When replacing the cable sleeve, it is important to keep the indented end of the sleeve down toward the collar protector, as this will allow the sleeve to fit properly.
- Carefully pry the cable sleeve open using the 5/32" allen wrench. Place both wire cables into the corresponding grooves in the cable sleeve.



- Place both wire cables into the corresponding grooves in the cable sleeve. Once both cables are started, then slide and press it into place.

HOW TO DISASSEMBLE AN RSA2 *CONTINUED*



- Slide the black puck down over the cable sleeve. Then, slide the cable sleeve upwards until it is flush with the bottom of the ball shanks.



- Slide the collar protector back into its place by pushing it upwards onto the cable sleeve.

*Note: Refer to the inspection criteria listed in section 4.4.3 to determine if the cable sleeve can be reused or it should be replaced. All failed replaceable components should be discarded and replaced with a new part.

HOW TO DISASSEMBLE AN RSA2 *CONTINUED*

Step 6: Installing the collar.



- Ensure that the two pieces of the collar are correctly oriented and aligned prior to tightening the screws. The etched writing should be oriented upright and the indented circle should be completed.
- The collar should be installed on the indented portion of the cable sleeve.
- When installing the collar, be sure to overlap the two pieces on the cable sleeve. Do not line the seam of the cable sleeve up the seam of the collar as this may cause unnecessary wear to the inner wire cables.



- Tighten both hex screws using the 5/32" allen wrench. The hex screws should be coated in a medium strength threadlocker (blue loctite 248) before tightening. Alternate tightening each screw until both are fully tightened and there is no gap on the collar.
- Once the collar is installed, slide the collar protector down until it is flush with the collar.

Step 7: Installing the split puck.



- If installing a used split puck, be sure to keep the worn side down to avoid damage to the black puck.
- Use the same vice grip technique described in the first step, replace the split puck.
- Use the vice grips to over adjust the split puck until both sides lay flat.

*Note: Refer to the inspection criteria listed in section 4.4.3 to determine if the split puck can be reused or if it should be replaced. All failed replaceable components should be discarded and replaced with a new part.

5.1.1.2.2 HOW TO DISASSEMBLE A TSA

Over time, TSA's will become worn and require routine maintenance. Follow these steps to disassemble and reassemble the TSA's properly. All replaceable parts must be purchased from RCI. For an instructional video on how to disassemble a TSA, access the Client Portal or navigate any browser to, ropescourses.force.com/ClientPortal/s/article/How-to-Disassemble-a-TSA

The tools needed to complete this task are:

- Vice grips
- 5/32" allen wrench
- 1/8" allen wrench
- Flat-head screwdriver

Step 1: Removing the split puck.

- To remove the split puck, place the vice grips straight on either side of the split.
- Apply opposing forces (upward and downward) to twist the split puck open enough to remove. Be careful not to apply too much pressure as it may deform the split puck and cause premature wear.
- Align the cable sleeve into the opening of the split puck and pull the assembly out

Step 2: Disassembling the housing.

- To open the housing, loosen and remove the slotted binding post assembly with a 1/8" allen wrench and a flat-head screwdriver on either side.
- Loosen and remove both hex screws using a 5/32" allen wrench.

Step 3: Removing the cable sleeve.

- To remove the cable sleeve, slide the collar protector down the wire cables. This will provide enough space to pull the cable sleeve down, releasing it entirely from underneath the black puck.
- Once the cable sleeve is free from the underneath the black puck, pry the cable sleeve off by bending the wire cables until fully removed.

Step 4: Inspecting all inner components.

- While the wire cables are visible, inspect by bending to expose any wire breaks. There should be no more than two wire breaks per two inches of wire cable.
- If the TSA does not pass inspection it should be removed from service, documented on the equipment inventory log, and discarded.

HOW TO DISASSEMBLE A TSA *CONTINUED*

Step 5: Installing the cable sleeve.

- When replacing the cable sleeve, it is important to keep the indented end of the sleeve down toward the collar protector, as this will allow the sleeve to fit properly.
- Carefully pry the cable sleeve open using the 5/32" allen wrench. Place both wire cables into the corresponding grooves in the cable sleeve.
- Once both cables are started, then slide and press it into place.
- Slide the black puck down over the cable sleeve. Then, slide the cable sleeve upwards until it is flush with the bottom of the ball shanks.
- Slide the collar protector back into its place by pushing it upwards onto the cable sleeve.

*Note: Refer to the inspection criteria listed in section 4.4.3 to determine if the cable sleeve can be reused or it should be replaced. All failed replaceable components should be discarded and replaced with a new part.

Step 6: Assembling the housing.

- Close the housing and ensure both wire cables are in their corresponding grooves.
- Once the housing is popped back into place, tighten both hex screws using the 5/32" allen wrench. The hex screws should be coated in a medium strength threadlocker (blue loctite 248) before tightening.
- Once the housing is popped back into place, tighten both hex screws using the 5/32" allen wrench. The hex screws should be coated in a medium strength threadlocker (blue loctite 248) before tightening.
- The hex screws should be installed facing opposite directions. Alternate between each screws when tightening. Tighten each hex screw until tight and there is no visible gap in the housing.

Step 7: Installing the split puck.

- If installing a used split puck, be sure to keep the worn side down to avoid damage to the black puck.
- Use the same vice grip technique described in the first step, replace the split puck.
- Use the vice grips to over adjust the split puck until both sides lay flat.

*Note: Refer to the inspection criteria listed in section 4.4.3 to determine if the split puck can be reused or if it should be replaced. All failed replaceable components should be discarded and replaced with a new part.

5.1.1.2.3 HOW TO DISASSEMBLE A SRTSA

Over time, SRTSA's will become worn and require routine maintenance. Follow these steps to disassemble and reassemble the SRTSAs properly. All replaceable parts must be purchased from RCI. For an instructional video on how to disassemble a SRTSA, access the Client Portal or navigate any browser to, ropescourses.force.com/ClientPortal/s/article/How-to-Disassemble-a-SRTSA

The tools needed to complete this task are:

- Vice grips
- 5/32" allen wrench
- Torque wrench/socket and ratchet
- New nylon lock nut
- Silver Grade Anti Seize
- Medium strength threadlocker (blue loctite 248)

Step 1: Removing the split puck.

- To remove the split puck, place the vice grips straight on either side of the split.
- Apply opposing forces (upward and downward) to twist the split puck open enough to remove. Be careful not to apply too much pressure as it may deform the split puck and cause premature wear.
- Align the cable sleeve into the opening of the split puck and pull the assembly out.

*Note: If you are just replacing the split puck follow the steps listed above, as well as the last step in this section in order to install a new split puck

Step 2: Remove the sheave assembly.

- Next, use a 5mm allen wrench and a 13mm socket and ratchet to remove the nylon lock nut at the end of the sheaves. Once removed, discard immediately.
- After the nylon lock nut has been removed, the sheaves can be removed. Take care to not misplace the inner spacers when moving onto the next few steps.

*Note: All nylon lock nuts are one-time use only. Once removed it should be discarded immediately to prevent accidental reuse.

Step 3: Disassembling the housing.

- Loosen and remove both hex screws using a 5/32" allen wrench.

Step 4: Removing the cable sleeve.

- To remove the cable sleeve, slide the collar protector down the wire cables. This will provide enough space to pull the cable sleeve down, releasing it entirely from underneath the black puck.
- Once the cable sleeve is free from underneath the black puck, pry the cable sleeve off by bending the wire cables until fully removed.

Step 5: Inspecting all inner components.

- While the wire cables are visible, inspect by bending to expose any wire breaks. There should be no more than two wire breaks per two inches of wire cable.

HOW TO DISASSEMBLE A SRTSA *CONTINUED*

Step 6: Installing the cable sleeve.

- When replacing the cable sleeve, it is important to keep the indented end of the sleeve down toward the collar protector, as this will allow the sleeve to fit properly.
- Carefully pry the cable sleeve open using the 5/32" allen wrench. Place both wire cables into the corresponding grooves in the cable sleeve.
- Once both cables are started, then slide and press it into place.
- Slide the black puck down over the cable sleeve. Then, slide the cable sleeve upwards until it is flush with the bottom of the ball shanks.
- Slide the collar protector back into its place by pushing it upwards onto the cable sleeve.

*Note: Refer to the inspection criteria listed in section 4.4.3 to determine if the cable sleeve can be reused or it should be replaced. All failed replaceable components should be discarded and replaced with a new part.

Step 7: Assembling the housing.

- Close the housing and ensure both wire cables are in their corresponding grooves.
- Once the housing is popped back into place, tighten both hex screws using the 5/32" allen wrench. The hex screws should be coated in a medium strength threadlocker (blue loctite 248) before tightening.
- The hex screws should be installed facing opposite directions. Alternate between each screws when tightening. Tighten each hex screw until tight and there is no visible gap in the housing.

Step 8: Installing the sheave assembly.

- Slide one of the sheaves onto the bolt with the snap ring facing outwards and visible.
- Then slide a spacer onto the bolt.
- Slide the bolt through the center hole in the housing. Then slide on the second spacer and sheave in the same orientation as noted before.
- Once the bolt, spacers, and sheaves have been reassembled, apply anti-seize (silver grade) to the threaded end of the bolt.
- Use a brand new nylon lock nut to secure the assembly in place. Torque the nut to 12ft-lbs.
- Once tightened, ensure both sheaves freely spin.

Step 9: Installing the split puck.

- If installing a used split puck, be sure to keep the worn side down to avoid damage to the black puck.
- Use the same vice grip technique described in the first step, replace the split puck.
- Use the vice grips to over adjust the split puck until both sides lay flat.

*Note: Refer to the inspection criteria listed in section 4.4.3 to determine if the split puck can be reused or if it should be replaced. All failed replaceable components should be discarded and replaced with a new part.

5.1.2 SAFETY EQUIPMENT CLEANING PROCEDURES

RCI recommends cleaning safety equipment as soon as possible after it has become soiled or dirty. Safety equipment can be cleaned using a mild detergent (Simple Green or Dawn dish soap) or by using vinegar. To clean harnesses, slinglines, or ropes:

1. If using a mild detergent (Simple Green or Dawn dish soap), dilute to a 1:1200 ratio of detergent to water. For example, dilute ½ oz detergent in 5 gallons of water. If using vinegar, dilute ¼ cup vinegar into 1 gallon of water. Never use any harsh chemicals such as bleach or ammonia.
2. Submerge the harness or webbing of the slingline into the water. Using a soft cloth, rub against the soiled parts of the harness or slingline. Do not use rough scrubbing tools as this can damage the webbing. Equipment should not be submerged for longer than 10 minutes in the solution.
3. Rinse thoroughly with fresh water and hang to dry out of the direct sunlight. Allow equipment to dry completely before storing. Never force dry or put equipment in a drying machine.



WARNING

- Never use any harsh chemicals such as bleach or ammonia.
- Do not use scrubbing or laundering tools such as wire brushes as this can damage the equipment.
- Do not soak the equipment longer than ten minutes.
- Do not hang the equipment up to dry in the direct sunlight.
- Never force dry or put a harness, slingline or rope in a drying machine.
- Do not use a pressure washer.

5.1.3 RETIRING SAFETY EQUIPMENT

All safety equipment that has been identified as failed and cannot be repaired or serviced, as described in sections 5.1.1.1 and 5.1.1.2 must be retired. Below is the recommended method for retiring failed safety equipment:

1. If an Operator has deemed a piece of safety equipment as failed, they should receive approval by a Manager before disposing.
2. The following should be recorded on the equipment inventory log for each piece of failed safety equipment prior to disposing:
 - Serial number
 - The reason it is being retired
 - The date it is being retired
 - Who retired the equipment
3. Remove all identification labels and serial numbers from the equipment
4. Cut the equipment up so that it is no longer usable
5. Dispose of the equipment in the trash

*Note: Safety equipment can sometimes be serviced or repaired. If it is believed that safety equipment could be repaired, follow the instructions in section 5.1.1.

5.1.4 REPLACING SAFETY EQUIPMENT

Replacement equipment and parts that are integral to life safety must be replaced/refurbished by RCI. All replacement parts must be purchased through or approved by RCI. Parts can be ordered from the RCI Client Success Department.

*Note: All safety equipment that has been removed from service must be noted on the equipment inventory log in accordance to the instructions listed in section 5.1.3.

5.2 ATTRACTION MAINTENANCE

5.2.1 ELEMENT SERVICING, CLEANING, RETIREMENT, AND REPLACEMENT

5.2.1.1 ELEMENT SERVICING

The most common type of maintenance needed on elements will be tightening loose connections. Any loose connections found on the elements must be tightened immediately. This can be completed with a wrench. Ensure that no participants are on or under the attraction while doing any maintenance or repairs on elements. Any tools brought onto the attraction must be securely connected to prevent dropping anything at height. Examples of loose connections may be found on:

- Ferrule T's
- Poly-fixes
- Eyebolts
- Quick links
- Element bolts

Another type of maintenance that may be needed on elements will be the use of Rescue tape®. Rescue Tape® is a self fusing silicone tape that is safe to use on the rope elements. Do not use any other kind of tape on the attraction. Rescue Tape® can be used to cover sharp spots or exposed wire on the elements that are within reach of a participant. The element in question must still pass inspection in order to use Rescue Tape® as a repair. After applying the Rescue Tape® to the location, the Operator or Inspector should ensure that the spot is safe to touch and is not still sharp. Even after applying Rescue Tape®, the element should be monitored daily for any changes or progression in wear to ensure participant safety. Contact the RCI Client Success Department for all product orders.

5.2.1.2 ELEMENT CLEANING PROCEDURES

Elements can be cleaned using a diluted solution of a non harsh detergent, such as Simple Green and rinsed with fresh water. The elements should be allowed to dry naturally. Avoid using any chemicals. Attractions located in marine or chlorinated environments should be routinely rinsed with fresh water.

5.2.1.3 ELEMENT REPLACEMENT AND INSTALLATION

5.2.1.3.1 MEASURING AND REPLACEMENT

Replacement elements can be ordered by contacting the Client Success Department. To order a new element, accurate measurements will need to be taken. All measurements must be recorded on the Measurement Checklist found in the Element Measuring Guide. The Element Measuring Guide is available on the RCI Client Portal. A full list of available element options can be found in the Element Catalog. The Element Catalog is available on the RCI Client Portal.

5.2.1.3.2 INSTALLATION

For ease of installation, review the placement of each attachment point prior to install. Start with upper attachments. Each element will have a number of attachments pre-fitted with eye bolts. These attachments connect through the existing holes on the course system. If applicable start with any attachments to the overhead beam.

The tools needed are:

- 1/2" Drive Impact Drill
- 1- 1/16" Deepwell Socket (1/2" drive)
- 1- 1/16" Boxend Wrench
- 500 lb. Ratcheting Chain Hoist
- 4 ft Synthetic Sling (Solid round recommended)
- 18" Rope Loop (Synthetic poly, Dyneema)
- 50 ft Rope (Anything above two levels will need multiple ropes) Do not use active ETK ropes.

Overhead Attachments



Step 1

Place all attachments on one side. Check that the washers are in place and lightly tighten the nuts by hand.



Step 2

Stretch the element across to the opposite side and place any attachments. Then use one 1/16 wrench to tighten down all nuts on both sides. While tightening, hold the eye bolt on the other side in place by inserting a rigid tool through the center to keep it from spinning.

INSTALLATION *CONTINUED*

Platform attachments

These attachments are identical to the overhead attachments and should be accomplished in the same two steps listed above.

Some attachments are heavier or tighter than others. If the element is unable to stretch completely across, first double check that the nuts have not been tightened down on the opposite side.

Step 1



- To start lifting or stretching an element that will not reach, RCI recommends securely strapping a come along to the nearest column using a continuous loop strap orientated directly in line with the attachment you would like to connect.

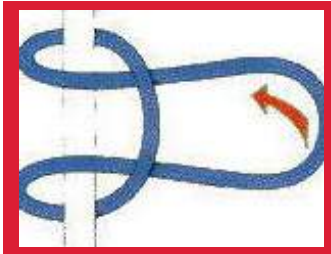


- When working on upper element attachments, secure the strap on the overhead element attachment bar. Place the strap as close to the attachment hole as possible while leaving enough space to tighten the nut on the other side.



Step 2

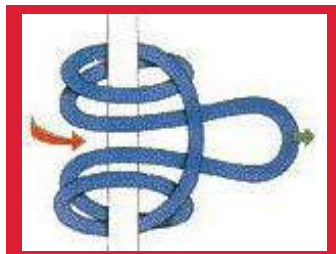
Use another continuous loop strap to create a prusik knot approximately three feet down from the loose attachment, while avoiding any contact with the rigid element material at the near the knot.



Step 3

To start the prusik knot, wrap the strap end around the element rope and pull the other end through the loop back on the other side of the rope.

INSTALLATION *CONTINUED*



Step 4

Continue to wrap the strap end around the rope and pull it back through the same loop two more times. To secure the knot, pull the end tight.



Step 5

Secure the come along to the end of the knotted strap and tighten to create enough slack to attach the element.

If you have any questions contact the Client Success Department.

5.2.2 ATTRACTION STRUCTURE MAINTENANCE

5.2.2.1 PAINT REPAIRS

RCI recommends that any paint damage be repaired within 48 hours of first steel exposure. The two methods for handling paint repairs on a Sky Trail® are as follows:

5.2.2.1.1 TEMPORARY SOLUTION

- Use a Scotch pad or 120 grit sandpaper to smooth any rough edges of the blemish.
- Lightly coat with a rust-inhibiting spray primer. The Rust-Oleum color of your choice or a similar product is acceptable for Sky Trails® located in indoor or non-marine environments. Sky Trails® located in marine environments should use ZRC as a rust-inhibiting primer.

*Note: When completely repairing the paint blemish at a later time, any rust-inhibiting spray primer must first be removed with a light sander or wheel before applying the permanent Epoxy primer and paint.

5.2.2.1.2 PERMANENT SOLUTION (RCI RECOMMENDED)

- Use a Scotch pad or 120 grit sandpaper to smooth any rough edges of the blemish.
- Mix the needed amount of epoxy primer part A and epoxy activator part B. Use a 4:1 ratio (primer to epoxy activator).
- Apply epoxy primer mixture to bare, cleaned steel with a fine tip brush. This step must happen within two hours of activating the epoxy primer. Once applied, the epoxy primer mixture will be dry and paint ready in about one hour at 70 °F (21°C).
- Mix the needed amount of epoxy paint part A and epoxy paint activator part B. Use a 4:1 ratio (paint to paint activator).
- Apply the epoxy paint mixture over the dried epoxy primer mixture.
- Clean and seal all cans of unused primer, activator, and paint for future use.

5.2.3 TRACK STOP DEVICES

A track stop device may be used for locations where the overhead track remains intact but the location wishes to close off a certain section of the attraction, without having to close the entire attraction. Examples are if an element is awaiting repair or replacement or if a Sky Trail® element route is shortened due to a lack of Operators. If an element has failed, track stops must stay installed until the element is replaced and inspected. Operators should inspect the track stops during their daily pre-use inspection to ensure they are still securely installed. Only install these bolts once participants are off of the attraction.

5.2.3.1 TEMPORARY TRACK STOP



The RCI temporary track stop device is specifically designed to temporarily close a Sky Trail® element, section, or path that is in need of repair without the need to close the entire attraction.

The temporary track stop should only be used by certified Operators or certified Inspectors. The attraction must be cleared and no one is to be allowed under the area where track stop devices are being installed and removed during installation. The temporary track stop is equipped with a wrist coil to help prevent dropping the device while on the attraction.

5.2.3.1.1 TEMPORARY TRACK STOP INSTALLATION

Follow the steps below to install a temporary track stop:

- Before entering the Sky Trail®, secure the coil on your wrist or connect it to a carabiner on your harness or slingline.

TEMPORARY TRACK STOP INSTALLATION *CONTINUED*

- Turn the knob counterclockwise all the way open before entering the Sky Trail®.
- Once you reach the desired location, with the coil still on your wrist, insert the top puck fully into the overhead track. Slightly shake side-to-side while pulling down slowly. This will cause the pendulum puck to rest on the overhead track surface.
- Once the top pendulum puck is in contact with the overhead track, hand tighten the knob clockwise until the bottom puck is in contact and snug against the track.

*Note: Be sure to close off all possible entrances to the element, path or section in need of repair. Using only one temporary track stop may not be sufficient.

5.2.3.1.2 TEMPORARY TRACK STOP REMOVAL

Once a repair has been completed, or a new element has been installed, Operators may remove the temporary track stops from the attraction in order to open the path back up to participants. Certified Operators or RCI certified Inspectors must complete a thorough inspection of the attraction prior to removing any installed temporary track stops. Follow the steps below to remove a temporary track stop.

- Secure the wrist coil on your wrist and turn the knob counterclockwise until it is fully open.
- Push up on the bolt to allow the pendulum puck to swing to a vertical position.
- Align the puck with the track opening and pull down.
- Leave the track stop wrist coil on your wrist until you have exited the Sky Trail®.

5.2.3.2 PERMANENT TRACK BOLT APPLICATION

Permanent bolts must be placed into any track that leads to any unlocked, unblocked, or unsupervised track exit, or where any critical safety failure is located past the block point. All permanent track bolts must receive RCI approval prior to being installed. Proof of installation may need to be submitted to RCI after installation. Contact the RCI Client Success Department for further details. To permanently close a path or section of the Sky Trail®, two bolt/washer/nut combinations may be used to create an assembly. Choose one of the following combinations:

Combination A

- Bolt: 5/8" - 11x2 grade 5 zinc
- Washers: 5/8 F844 zinc washers x 2
- Nuts: 5/8aa zinc nuts x 2

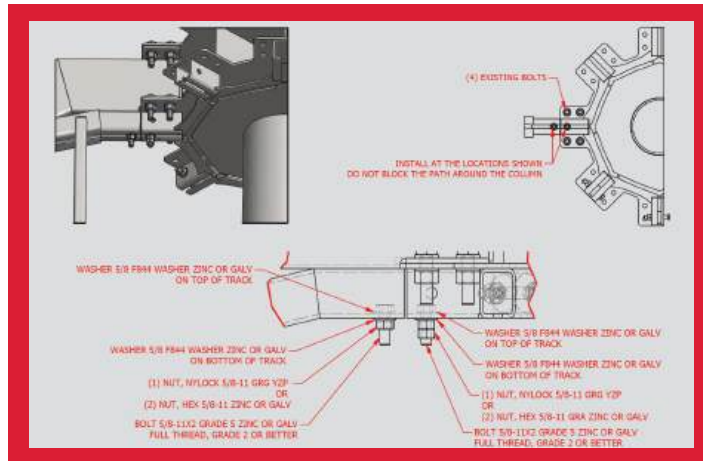
Combination B

- Bolt: 5/8" - 11x2 galvanized full thread, grade 2 or better
- Washers: 5/8 F844 galvanized washers x 2
- Nuts: 5/8 galvanized Nuts x 2

Combination C

- Bolt: 5/8" - 11x4-1/2 galvanized, grade A307 or A325
- Washers: 5/8 F844 galvanized washers x 2
- Nuts: 5/8 galvanized Anco® Nut x 1

PERMANENT TRACK BOLT APPLICATION *CONTINUED*



After selecting a combination, install one assembly in the column ring portion of the track and a second assembly in the overhead portion of the track. One assembly must be on each side of the splice between the column ring and overhead track.

5.3 MODIFICATIONS

Every modification done to a Sky Trail® must be reviewed and approved by RCI prior to implementation in order to be deemed compliant. These modifications could include Sky Trail® additions or permanent track bolt applications. RCI reserves the right to review the modification after implementation to ensure that the work was completed as required for compliance and without compromising the Sky Trail®. Contact the RCI Client Success Department for information on the requirements needed for attraction modifications.

6.0 REVISIONS

Revision history for this document is outlined in the following table:

Table 1: Revision history

REV	MODIFIED	APPROVAL	APPROVED
R0	GRACE COLEGROVE	03/11/2022	JORDAN TERPSTRA
R1	GRACE COLEGROVE	08/28/2023	JORDAN TERPSTRA

Summary of R0 Changes:

- Initial Publication

Summary of R1 Changes:

- Page 8, Operator age requirements